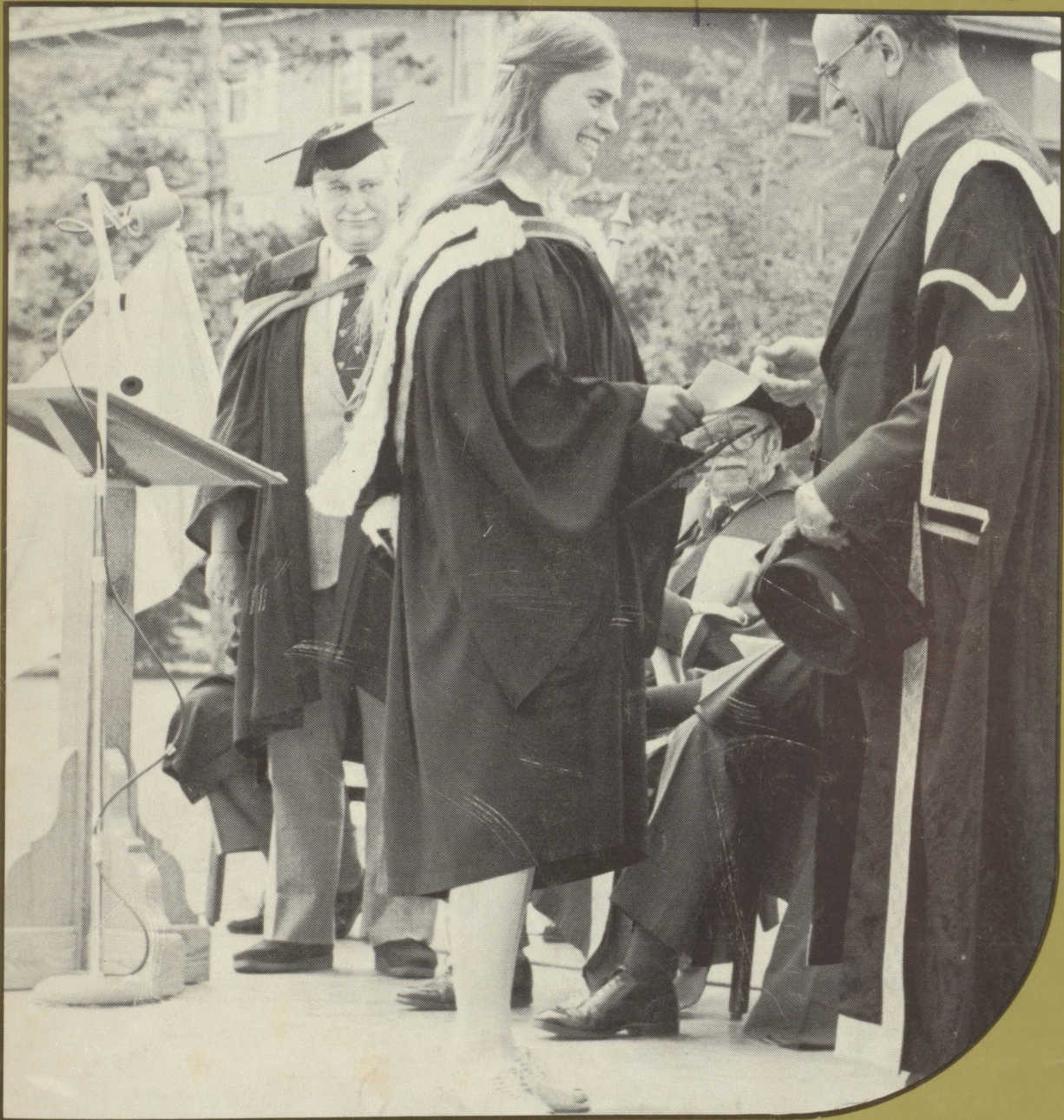
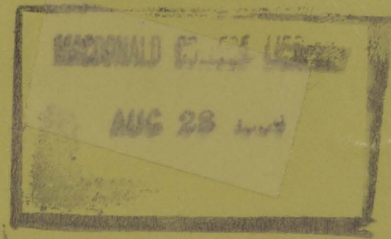


THE MACDONALD JOURNAL

AUGUST
1984



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Cover Story

We thought we would add cover girl to the list of achievements of Margarete Zillig from Scotch Village, Nova Scotia. Marg, who was presented to Chancellor A. Jean de Grandpré by Dr. Norman Lawson, majored in General Agricultural Sciences. She was a University Scholar and graduated with great distinction and received the Governor General's medal and the McGill Alumnae Society Prize. Congratulations to her and all the other graduates. For this alumni issue may we point out three views of Mac: the first by Jean McHarg whose career and enthusiasm keeps her in close touch. All five members of the Newton family attended Macdonald; Dorothy Swales was one of them. You'll want to reread her fascinating account, and four of five of Professor Bruce Baker's children attended Macdonald. He's been on campus since '46. Mac really is a family institution.

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DAVID MACDONALD STEWART (1920-1984)



Special guests at the ceremony for the dedication of the cornerstone for the new Macdonald-Stewart Building in 1976 included Frank Sydney Grisdale of the first graduating class in Agriculture from Macdonald, Mrs. David Stewart, and Dr. David Stewart. Dr. Stewart died on April 27, 1984.

With the passing of David Macdonald Stewart the members of Macdonald College have lost a dear friend. His commitment to the college and his demonstration of that commitment in terms of emotional and financial support are unsurpassed. He carried forward the family tradition of personal involvement in the college, which originated with Sir William Macdonald, and was carried on by his parents, the late Mr. and Mrs. Walter Stewart. Through his involvement in the many projects that enhanced the quality of life on campus, he became known as a friend to both staff and students. He took time from his many other commitments to attend our celebrations and

to give us his support when difficulties arose. His was the true spirit of the Clan Macdonald and we are proud to have known him.

He was a man of paradox. A shy, private man for whom it was not easy to speak at so many public functions. Yet at these gatherings he was always willing to share his innermost thoughts and aspirations, as he did most movingly at our Founder's Days. He retained a child-like innocence and enthusiasm, and belief in a benign world, right to the end. Yet he was ready to outmaneuver anyone who threatened that which he held dear to him, and to take the necessary responsibility to do what had to be done to preserve what

he valued. This was well demonstrated in his fight for the retention of Macdonald College on the Ste-Anne de Bellevue Campus, and in his willingness to support our relocation to the Macdonald-Stewart Building.

He was a holist and a generalist, and he saw connections between things that were missed by the majority. Yet he was also a specialist with a detailed knowledge of the rich historical traditions upon which our society is built. He reminded us frequently of these, and for this we are grateful.

While he valued traditions, he was not afraid to look beyond the well established programs and to en-

courage new ideas. He was attracted by the adventure of a new concept or an innovative approach, and was often the lone supporter of individuals who were willing to seek new solutions to old problems.

Hundreds of graduates of the college, who are practising in all parts of Canada and in many other countries throughout the world, have been the beneficiaries of his support for the college. The work of its graduates in these widespread communities is an extension of his interest in the welfare of this faculty.

Among his many qualities, however, one stand out, and that was his vision: of Canadians proud of their heritage, of students and staff proud of their college, of an agriculture that could boast nourishment and sustainability as its primary goals, and of a world in which all have an opportunity to meet their unique individual needs and to develop their unique potential to the full.

As members of Macdonald College we are proud to be part of his extended family, and we join in mourning his death with the many others who regarded David as a friend. More particularly, we offer our sincere condolences to Liliane Stewart and to the other members of the Stewart family.

Though David Macdonald Stewart has gone from us, the products of his labours and his visions remain, and through his inspiration and our efforts these will persist and multiply as a living epitaph to this remarkable man.



Dr. Stewart with Jack Sadler, President of the Students' Society, at the ribbon cutting ceremonies for the Macdonald-Stewart Building on June 2, 1979.



Dr. Stewart rarely missed a Convocation at Macdonald. He is seen here walking in the procession with Dr. Jean David in 1983.



At Founder's Day in February 1984 Dr. Stewart is shown enthusiastically speaking on a favourite topic.

The McGill Advancement Program: A Campaign for McGill and Macdonald

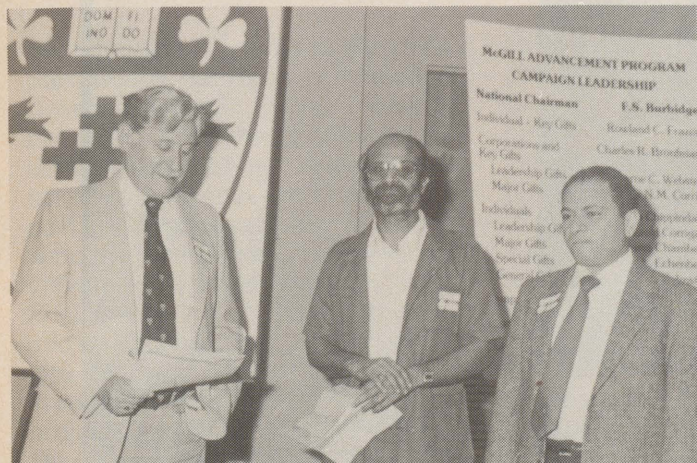


At a Macdonald reception to review McGill Advancement Program (MAP) plans are, left to right, Dr. L.E. Lloyd, Vice-Principal Macdonald College, Chief Justice Alan B. Gold, Governor Emeritus of the university, and Stephen Olive, Registrar.

Colleges and universities all across North America are facing a time of limited growth due to budgetary constraints. When McGill's Board of Governors decided to organize a major capital appeal for the 80s, they began with a university-wide plan to identify McGill's strengths and set priorities for a coordinated, unified campaign. These most-needed projects formed the basis of the McGill Advancement Program launched last fall which is seeking to raise some \$61 million.

Over one-third of the capital funds sought will benefit staff through endowments for teaching positions and through staff and research support. Other funds will create an enhanced climate for learning and research: scholarships and fellowships to attract top students and talented young researchers and scholars; improved computerization and library holdings; long-needed building renovations, and essential new laboratory equipment.

Every part of the private sector will be given occasion to participate — from major corporations, foundations, and key individuals, to McGill and Macdonald alumni, staff members, and students.



Macdonald staff at the reception included Professors N. Lawson, Diploma Program, V. Raghaven, Agricultural Engineering and M. Fanous, Chemistry and Physics.



Participating in the presentation to the Macdonald staff on the details of the MAP are, left to right, Dr. Bob Broughton, Campaign Committee member, Mrs. Joan Dougherty, Graduate Governor, and Dr. Gordon Maclean, Chairman of the Campus Campaign.



Discussing current needs of the College Library are, at left, Professor Bruce Downey of Animal Science and Bruce Grainger of the Library and, above, Nellie Brayne of the Library and Dr. Gordon MacIachlan.

Faculty of Agriculture: Looking Ahead

In the morning sow thy seed" may have been a progressive motto in Solomon's day, but modern agricultural methods go far beyond planting and then praying for rain. The world's need for food and better ways to produce it increases dramatically year by year — and Canada, as a leading net exporter, has a vitally important role to play. McGill's Faculty of Agriculture at Macdonald College is committed to providing major contributions in this field.

A basic goal of the Faculty of Agriculture is to prepare today's young scholars, men and women, to be skilled, experienced, and flexible problem solvers. Right now, the faculty is planning ahead to ensure that agricultural education at McGill is both current and comprehensive; it is here that private sector support makes the critical difference. Through the McGill Advancement Program (see page 4), the needs of the future can be met in the following areas:

Farm and Poultry Unit building innovations. This important teaching and research facility has occupied the same quarters for some 75 years. There is an urgent requirement to

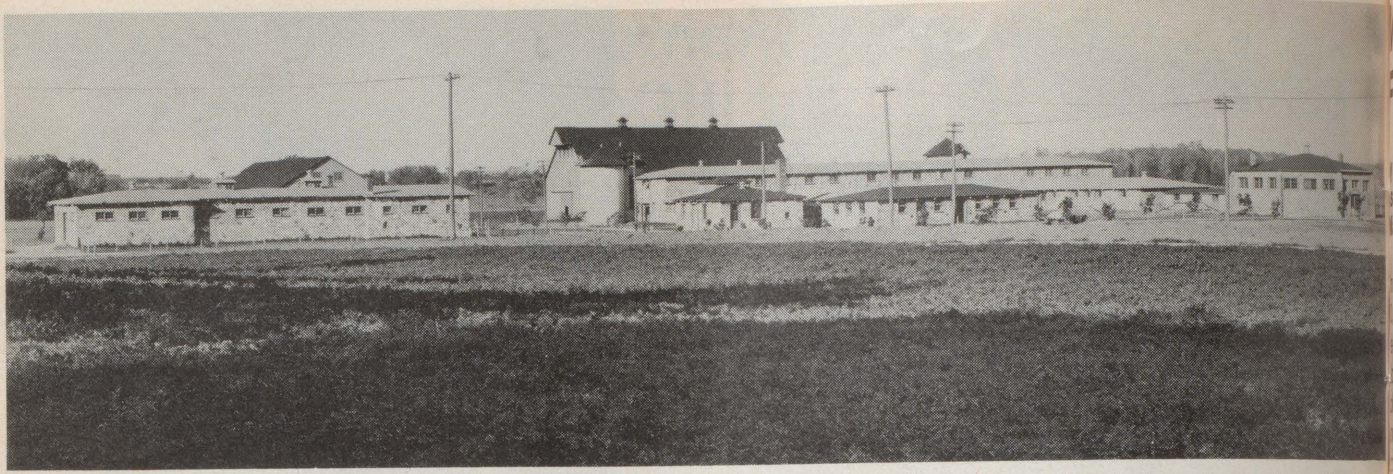
refurbish these buildings since they provide the Faculty's increasing number of urban students with the "hands-on" experience so necessary to an understanding of agriculture's practical applications.

Support to the Macdonald College Library. New acquisitions for research collections in entomology and other agricultural sciences are essential to maintain the library's high standards. Other, more logistical areas of planned improvement include extended hours of service, increased duplication of McGill's other library holdings, and enhanced transportation and delivery systems to move educational materials between Macdonald and the main campus.

The McGill Nutrition and Food Science Centre. This centre, created in 1980 as a joint project of the Faculties of Agriculture and Medicine, is committed to the study of nutrition and health and the development of alternate sources of nutrition for people and animals. Now located at the Royal Victoria Hospital, the centre has

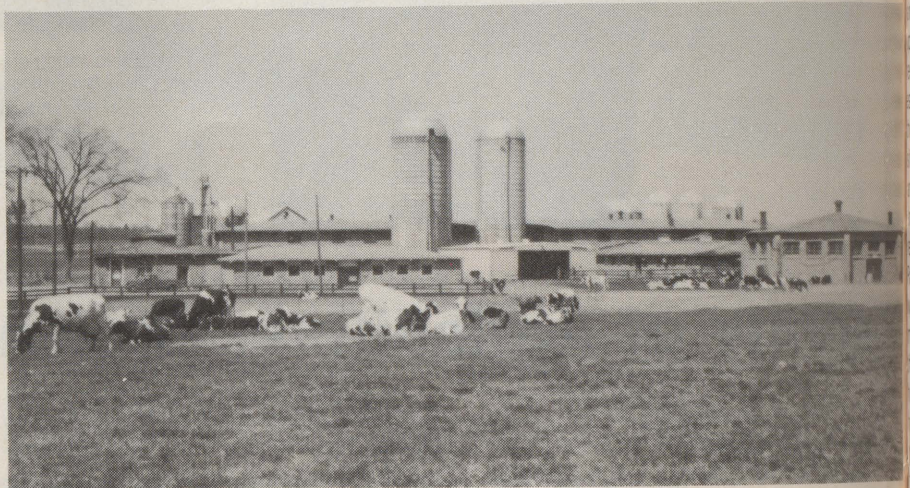
already benefited from the McGill Advancement Program. An endowed chair for the centre's Director will ensure the continuation of its activities including nutrition and food science research, postgraduate and undergraduate teaching, and the dissemination of information to food science professionals within the University and in the community at large.

Visiting Professorships. Temporary, five-year appointments in two rapidly expanding fields — agricultural engineering and molecular genetics — would represent valuable additions to the Faculty's staff. The Department of Agricultural Engineering's appointee would prepare graduate engineers to cope with practical problems in the industry, to conduct research, and to supervise postgraduate students in meeting technological challenges. The faculty's second requirement is for an expert in modern recombinant DNA techniques to help students and staff keep abreast of new developments in the field and to study its many potential applications to agriculture and related industries.



A vintage photo of the College farm, above, and, below, as it looks today. New livestock and poultry buildings are high on the list of priorities, and it is hoped that construction may begin in the near future.

Support to the Faculty of Agriculture will be directed to these strategic areas. Moreover, the university as a whole — and each part of it — will benefit from new developments projected in computerization, libraries, scholarships, fellowships, and funds for research and development. In specific and more general ways, then, the current capital campaign promises to maintain and strengthen McGill's reputation and leadership in Agriculture. "As you sow, ye are like to reap" — contributions to the McGill Advancement Program can make it happen.



REUNION CLASS CHAIRMEN

Class Chairmen are the vital communication links between Macdonald and its far-flung graduates. Their role is to relay information to classmates and encourage them to make an early commitment to get together for the Homecoming. The Reunion Committee acknowledges the leadership provided

by these representatives of the Honour Classes and salutes them.

At a special reception in April, Class Chairmen were invited to share ideas about some special Reunion '84 plans for the Homecoming on September 29, 1984, which, with their assistance, the Reunion Committee predicts will be the

best response in years and will surpass the record number of graduates who returned in 1983. Full details of the events will be mailed out to all graduates in August.

For information relating to Reunion, contact Susan Reid-Boyle at (514) 392-4815.

COME BACK AND MEET YOUR CLASSMATES

REUNION '84

All welcome, especially graduates of years ending in 4 or 9

**Macdonald Reunion will be held on September 29 at Macdonald College
in Ste. Anne de Bellevue**

McGILL NUTRITION AND FOOD SCIENCE CENTRE

by S.P. Touchburn
Associate Director
Macdonald College¹

On a pleasant Friday morning, March 30, 1984, in a small but auspicious ceremony in the Royal Victoria Hospital in Montreal, Principal David L. Johnston declared the McGill Nutrition and Food Science Centre officially open. The centre is a joint venture between the Faculties of Medicine and Agriculture — an umbrella structure aimed at enhancing interdisciplinary opportunities and fostering mutual respect and cooperation. It was established in 1980 by a donation from the Max Bell Foundation to the University. Its Director, Dr. Errol B. Marliiss, arrived in 1982 and devoted much time and effort to supervising a complete renovation of one floor in the Hersey Pavilion of the hospital. This rebuilding was supported by a donation in memory of Mr. Harold Crabtree and the laboratories have been named in his honour. As part of the ceremony, his son, Mr. H. Roy Crabtree, formally presented the suite of labs and offices to the university.

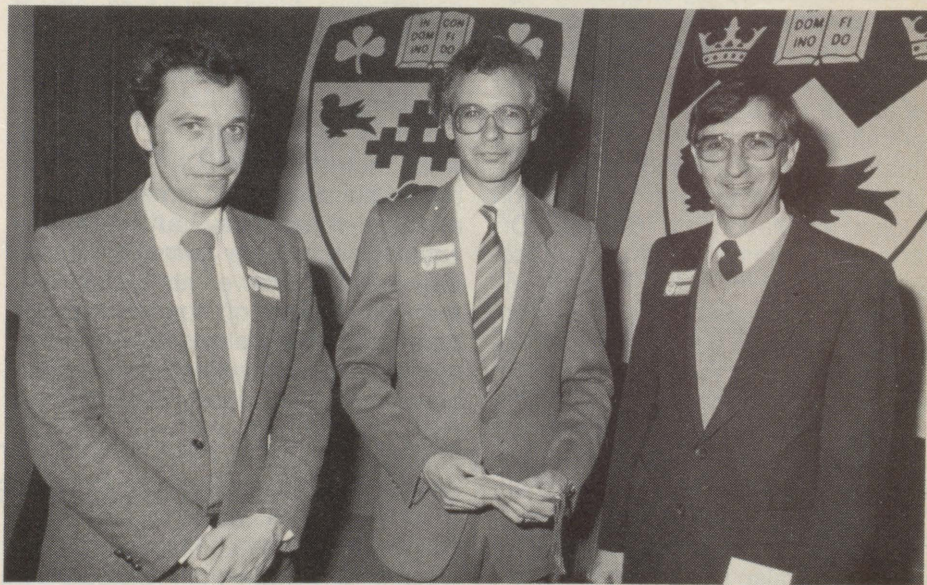
In another important event during the dedication ceremonies that Friday morning, Mrs. Miriam (Weston) Burnett announced the endowment of the Garfield Weston Chair of Nutrition. Principal Johnston acknowledged the gift and installed Dr. Errol Marliiss as Director of the Centre and Weston Professor of Nutrition.

Since his arrival, Dr. Marliiss has been successful in assembling an outstanding staff of experts in nutrition and metabolism. The Crabtree Laboratories represent the administrative and research headquarters for the centre. The staff there currently number four faculty members, two postdoctoral fellows and 20 administrative and technical staff. Assisting Dr. Marliiss in the administration are Dr. Gerry Radziuk, Associate Director, Research, and Dr. Sherman Touchburn, Associate Director, Macdonald College.

The author is responsible for the liaison between colleagues at the Macdonald College campus and the Montreal campus. He is also Professor of Nutrition in the Department of Animal Science.



At the opening ceremonies of the McGill Nutrition and Food Science Centre are, left to right, Dr. E.B. Marliiss, Garfield Weston Professor of Nutrition, Mrs. Miriam (Weston) Burnett, Chairman, Board of Trustees, Weston Foundation, Dr. L.E. Lloyd, Vice-Principal, Macdonald College, Mrs. Wendy (Weston) Rebanks, Treasurer, Weston Foundation, Principal Johnston, and Dr. Richard Cruess, Dean of Medicine.



The Policy Committee, left to right, Dr. Jerry Radziuk, Associate Director, Research, Dr. Errol Marliiss, Director, and Dr. Sherman Touchburn, Associate Director, Macdonald College.

Linking interests in nutrition ranging from domestic and farm animals to laboratory animals and humans, membership in the centre totals 40 researchers in the Faculties of Medicine and Agriculture and the School of Food Science. As things progress, individuals with nutrition and food interests in other faculties will join the centre.

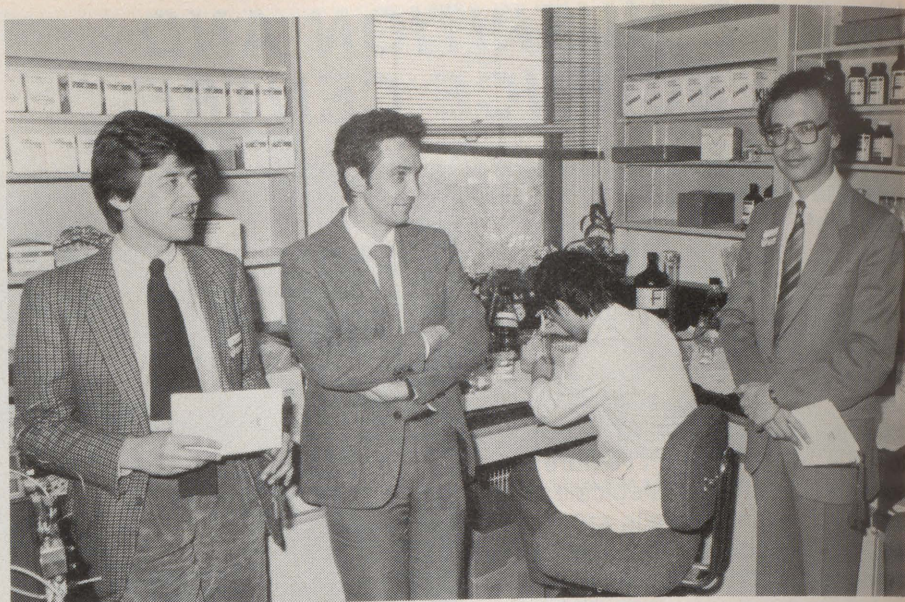
In his remarks at the opening ceremonies, Vice Principal Lloyd, Dean of the Faculty of Agriculture, emphasized the uniqueness of including Food Science in this centre because it represents not only the processing and preparation of foods but also the delivery of nutrients to the consuming population. He stressed the point that the executive of the Weston Founda-

tion appreciated this aspect of the centre as well as its strong background of basic nutrition to complement the clinical approach.

Dr. Richard Cruess, Dean of Medicine, pointed out the importance of private philanthropy in providing such new and valuable initiatives during these times of decreasing budgets and continuing inflation.

Nutrition instruction to medical students in the past has been limited, but a fundamental course will be provided in the newly-revised McGill curriculum. Organized by Dr. Marliss, it will draw on the expertise of a number of the centre's members. A nutrition seminar series is already in progress and other opportunities are being exploited to increase nutrition awareness in the medical community. A future goal of the centre will be to promote the dissemination of information to all nutrition and food science professionals within the university, in the McGill teaching hospitals, and in the community-at-large.

The centre provides opportunities for Master's and Doctoral projects in clinical nutrition by registration through the Department of Animal Science. This represents an extension of the graduate programs in nutrition in that department. For anyone outside of agriculture, this may seem a strange situation. The explanation lies in the historical development of nutrition studies at Macdonald College. Dr. Earle W. Crampton came to Macdonald College in 1922. Through his 51-year professional career at Macdonald College he established a worldwide reputation in teaching, research, and extension in the field of nutrition. In 1946 nutrition research had evolved to the point where a separate Department of Nutrition was established. Crampton and colleagues were working with many different species of animals and also in the field of human nutrition. The Ph.D. program was added to the Master's degree program in 1950. Since that time, many of its outstanding graduates have gone forth to serve the country and the world. In 1960 the nutrition program was incorporated into the newly created Department of Animal Science where it remains today as the University's only graduate program in nutrition. The nutrition staff in Animal Science and those in the School of Food Science have maintained well-developed teach-



In one unit of the modern Crabtree Laboratories are, left to right, Dr. Phillip Poussier, Dr. Radziuk, and Dr. Marliss. Their research concentrates on how people normally use dietary and body stores of fuel and how its use changes in obesity, diabetes, and digestive diseases.

ing programs which have graduated dietitians, nutritionists, and food technologists of internationally recognized excellence. A broad base of research has evolved, including such diverse areas as food processing, various aspects of animal and human nutrition, including community nutrition, and Third World nutritional problems.

Within the Faculty of Medicine, while nutrition activities have long been implicit in such areas as pediatrics, obstetrics, and gastroenterology, the only formal programs have been in intravenous and special formula feeding of hospitalized patients. Considerable expertise in nutrition-related subjects is present, however, in the Departments of Phar-

macology and Therapeutics, Biochemistry, and the university surgical clinics at the Montreal General and Royal Victoria Hospitals. Nutrition is an integral part of many medical specialties and a principal aim of the centre will be to bring together the varied interests from these many unrelated, administrative units.

This article highlights the centre's physical and administrative home in the Royal Victoria Hospital. The centre represents the culmination of the original plans of the organizing committee — that a renowned nutrition scientist should be invited to establish a solid core of world class researchers to serve as the focal point for nutrition interests throughout the McGill community.

THE 25th INTERCOLLEGIATE WOODSMEN COMPETITION

On January 26, 1985, Macdonald College will be hosting the 25th intercollegiate woodsmen competition. It should be a great event, and we are hoping to see many woodsmen and woodswomen from the past 25 years return to Macdonald for this special event.

Some great woodsmen teams have competed on this campus and Macmen and women have taken on teams from other colleges in Quebec, from the Lakehead, the Sault, New Brunswick, Nova Scotia, New York, and Maine. Over the years Macdonald College has won many championships here and on the road. Such events as speed chopping, cross-cut and swede sawing, pole climbing, felling, water boiling, and axe throwing have drawn some great crowds in the past 25 years.

In 1985 a reunion will be held in recognition of the 25 years of woodsmen activity on this campus and teams from previous years will be notified. We hope the Macdonald woodsmen tradition and dedication will be evident next year and will help us to begin another 25 years of fun and challenge.

Fond Memories and Close Ties

by Jean McHarg, BSc (HEc) '60

When I was asked by the Editor of the Journal recently to turn my thoughts to my associations with Macdonald, which have extended beyond my formal education, I tried to recall why as a maritimer Macdonald was chosen in the first place. I had been to boarding school in Nova Scotia, and I remember that I didn't want to follow the crowd to a local university; I wanted to do something different. As Judy Herder, the sister of a school friend of mine was already at Mac, my parents agreed that it would be all right for me to go "all that way." Times have changed for no maritimer would consider Montreal very far away today.

I have fond memories of the next few years at Mac. I came as a Freshieoph into second year Home Economics, and I remember never having enough time to study but lots of time to place tennis in the fall. Then R.D. Hamilton started a curling club and, as many of the "swampie" Aggies had curled at home, we had a good time. Dee Morrell Laszlo, Veda Nightbody Dowdall, and I were part of the group that curled at night — I think it was Saturdays — on the hockey rink. The games were very challenging since the sheets did not run very true, the ice being worn down on the corners by skaters. I have a vague recollection of someone, perhaps David L. MacFarlane, throwing a rock on one sheet that landed in the 12 foot of the adjoining sheet! I think I am a charter member of the Macdonald College Curling Club.

Somewhere along the way I also got involved in the Community Chest Committee. They held an annual blood donor clinic in Brittain Hall and a Monte Carlo Night with such wild games as white mice races! It was a lot of work but there were a lot of fun games and great people to work with. I didn't take part in the Royal in the normal Home Economics way. I showed a sheep — a wild Cheviot that ran away from me and got behind the rope in the arena. Needless to say I didn't get a ribbon!

In the senior year the Class of '60 girls moved into Laird Hall and lived in the lap of luxury. Dorothy Anderson



Enjoying the pre-luncheon reception on the terrace of the Centennial Centre at last year's Grad Reunion are Dean Lloyd and Jean McHarg.

Graham and her house committee had succeeded in getting the leave system completely revamped — we had been in at nine with only a certain amount of 11 o'clock leaves. We all have fond memories of late night sojourns on Stewart Hall's "garbage hill," getting ready for the proms, "sun tanning" under a heat lamp.

Studies and Professors

When I was at Mac I didn't appreciate half of what was going on in my development academically. Now that I am teaching there are so many things that I tell my students or insist that they do because Miss Stickwood made *me* do it! Like scraping off a rolling pin! How well I remember the clothing course taught by Miss Jenkins. Straightening a piece of wool fabric! Anne Olney Sparks and Andrea Gustafson Lothrop were part of a class I taught not long ago on making duffle coats, and we reminisced about Miss Jenkins and how well she taught us. I also remember Mrs. MacFarlane's sociology course. Today's students get so much more exposure to the Humanities than was available to us but our instruction in the basics was, I feel, excellent. I got some excellent advice from Miss Honey: I could not make up my mind about Dietetics or Teaching. (If I were making the decision today, I'd choose Consumer Studies or Communications.) Miss Honey was very far-sighted and

her advice was "go into Dietetics and take Education after graduation." She saw unions and government contracts on the horizon and, in following her advice, I came out ahead years later.

After Graduation

After Mac I went to Mount Allison and obtained my B.Ed. I taught Home Economics at Lake of Two Mountains High School in Deux Montagnes, specializing primarily in food for 10 years. We moved to the South Shore in 1971, and I taught professional cooking at Richelieu Valley Regional High School for a year, then moved to Chambly County High School in St. Lambert where I teach all facets of the Home Economics program. We are currently implementing the new program for Secondary II boys and girls — it is a compulsory course for boys and girls and is offering great new challenges. I am involved in helping non qualified (in Home Economics) teachers cope with teaching unfamiliar course content as well as deal with a different kind of classroom management. I have watched this new course evolve as a member of the Comité Consultatif d'Economie Familial for the Ministry of Education of Quebec. (See Editor's note at end of article.)

Professional Organizations

As a member of the Quebec Home Economics Association and the Cana-

dian Home Economics Association, I would like to stress very strongly to recent graduates the importance of active participation in professional organizations. It has been important in my professional and personal development. I urge graduates to not only join but also to become active because it is the best form of "networking" I know and many employment opportunities arise from the contacts made in such groups.

Contact with Macdonald

I have kept in close touch with the College in a number of ways. First, as the permanent class secretary I have been writing newsletters for about 20 years now. It is great fun to receive news of classmates and although it takes time to condense it, all the personal notes of thanks I get make it worth-while.

A few years ago, when I moved to St. Bruno, I met Dick Evans of the Class of '55 and he encouraged me to be active on the Macdonald Branch of the Graduates Society. At present I am Branch Secretary and it has been interesting to be close to Mac as the changes take place on the new campus. When the Quebec Home Economics Educators Association was formed in 1967, we used to hold workshops at Macdonald working very closely with Dr. Mark Waldron at the time. I'm sorry that that policy was abandoned because it brought Home Economists to Macdonald and kept them in contact with the Faculty and the campus. It was also an opportunity to keep in touch with other Mac graduates; however, as vice-president of the Canadian Home Economics Association I get to see grads at annual conferences and various meetings. As Dr. Touchburn said at Grad Reunion '83, "Mac grads pop up all over the place."

Being a maritimer, I also see a number of grads in my travels through Nova Scotia, New Brunswick, and P.E.I. in the summer. I got a big thrill out of talking to a boy with a Mac jacket at the Olands International Ox Pull in Bridgewater last summer.

I feel a close affinity to agriculture and remember that Miss Neilson once said that we held a privileged position sharing a campus with agriculture students. I agree. Again at the Reunion '83 when listening to Dr. Garth Coffin

discuss the Agricultural Economics Department's development over the years I was impressed with how much of what he said touches the ordinary Canadian in one way or another. As a Home Economist concerned with the well being of the family, I think that much of the quality of life we are striving to achieve is rooted in agriculture because food production is so basic to that well being.

Notes from Past Newsletters

Dr. Sam Portch always writes from a foreign country; Dr. Bob Cecil is a professor at the University of Western Ontario specializing in Caribbean geography; Lt. Col. Jean Liberty is a Dietitian with the Armed Forces in Edmonton; Dr. Eric Beauchamp is a professor at the University of Guelph, and Ross Sager was named "Farmer of the Year" at a Wentworth County Federation of Agriculture Banquet last year. The award is presented in memory of his father which made it extra special. He was chosen because he received his Master Breeder from the National Holstein-Friesian Association and was nominated by four different organizations and, if space permitted, I could go on and on about other class members.

Reunion '85

We haven't made any final plans as yet but after the 20th Year Reunion, which was very successful, many class members promised to come, and I'm sure that our class will be well represented. I hope to be able to pull off another "coup." Larry Day came

to our class dinner in 1980, but, unfortunately, he passed away last November, so we won't be able to enjoy a repeat performance by him. The Class of '60 is lucky (as are all years ending in 0 and 5) because the Mastery for Service Award, inaugurated in 1980 to commemorate the 75th Anniversary of Macdonald, will again be awarded in '85 and we will probably be part of a bigger and better awards ceremony. I think reunions are improving every year and I hope that the '84 and '85 ones will both be well attended.

(Editor's note: A Montreal Gazette article printed earlier this year gave almost one full page to Jean McHarg's new compulsory "skills in living" course at the High School in St. Lambert. The article focussed on the cooking classes which are now compulsory for boys as well as girls and mentioned that the girls "quickly squelched the plea "Can you dry my dishes for me?" It pointed out that the boys were adapting well to the cooking classes and enjoying experimenting with basic recipes. They were also trying out their homework on their parents! The boys are learning cooking, sewing, money management and are learning to organize time to carry out such tasks as cleaning their bedrooms, and it was pointed out that next year the girls will be required to master such skills as simple electrical repairs and woodworking.

Jean McHarg told the Gazette that one boy ironed his pants with a cold iron, that they all used too much detergent but, though they might have trouble threading the needle, they completed their made-to-measure sweat pants well ahead of the girls.

The Gazette article pointed out that Jean McHarg represented the Quebec Home Economics Association on the Quebec Ministry of Education's committee that planned the new course. According to local authorities, Quebec is the only province where the course to teach both boys and girls basic homemaking skills will shortly become compulsory for all.

Gold Key Award Committee

The Macdonald Branch took on the task of initiating the return of the Gold Key Award. Under the direction of the Faculty Rep on the Board, Dr. Hans Hueckel, a committee was formed, involving the Students' Society and Centennial Centre representatives, to single out those students who have made an outstanding contribution to extracurricular activities at Macdonald College.

The competition for this annual

award is well underway and nominations for the current year are at present being reviewed by the committee. The worthy recipients will be acknowledged for their leadership in student affairs and presented with a gold pin, a symbol of the "Gold Key Award," at Reunion '84.

The competition is open to all students attending Macdonald College who have maintained a high standard in their programs.

CONVOCATION

June 1, 1984

After a week of rain and cold weather, June 1, 1984, was a balmy day full of gentle breezes and warm sunshine, an ideal day for close to 250 graduating students, Macdonald and McGill staff and dignitaries, honoured guests, families, and friends gathered on the Macdonald campus for McGill's only outdoor Convocation.

Vice Principal L.E. Lloyd read an In Memoriam to David Macdonald Stewart, which may be found on page 2 of this issue. In his opening remarks the new Chancellor A. Jean de Grandpré said, "I am particularly happy to preside over these ceremonies here at Ste. Anne de Bellevue. In the early 1970s I was a member of a committee examining the future location of this faculty, and I found myself writing a minority report recommending that you stay right here rather than move to the main McGill campus. Now I see how right I was." These remarks received a warm round of applause as did the graduates who received their diplomas and degrees.

Dr. Margaret Scott McCready received an Honorary Degree (see page 2) and Dr. Howard A. Steppler was made an Emeritus Professor of Agronomy. In his address Dr. Steppler reflected on his 35 years at Macdonald (see *Macdonald Journal*, May, 1984). In conclusion he asked if there was anything in his own experience that might be of use to the graduates. "Never close your books," he said, "When you do that you have also closed your mind. Every opportunity that arises provides new chances of learning, new approaches to an old problem. If you search each new experience, I am sure you will find something of value."

Dr. Steppler said that he had gathered enrichment and ideas from other disciplines, not just disciplines within agriculture. "Move out into the social sciences, talk to anthropologists, sociologists, read history."

Agriculture is an extremely complex system, Dr. Steppler pointed out, and he said, "people are central to that system. Both those who operate it and those who benefit. You must understand their wants and desires if you are to do something to improve that system. Listen to others. You have much



Howard A. Steppler, left, with the Chairman of the Board of Governors Hugh G. Hallward, was made an Emeritus Professor of Agronomy.



Margot van Wettum, who majored in Dietetics, received the Harrison Prize in Food Science.

to contribute . . . Recognize also, that you cannot take a piece out of that system, manipulate it and assume that it

can be placed into the system and function as you had planned in isolation."

Honorary Degree

It is my privilege to introduce to you, Mr. Chancellor, and to this Convocation, Dr. Margaret Scott McCready, a distinguished home economist whose contributions to her profession have been evident in academic programs, in the structure of national professional organizations, and in the sphere of influence of volunteer agencies whose mission has been the health and well-being of the family.

Dr. McCready was born in London, Ontario, and received her primary and secondary education in Guelph and Toronto. She earned the Bachelor of Arts degree in Household Economics at the University of Toronto and completed her dietetics education through an internship at St. Luke's Hospital in New York. Dr. McCready left Canada in 1937 to participate in the United Kingdom Diet Survey in association with Sir John Boyd Orr, and her doctoral work at the University of Aberdeen in Scotland was based upon this survey.

Dr. McCready had given energetic support to the goals of home economics throughout her career and both McGill and the University of Guelph have been direct beneficiaries of her leadership. Her university teaching and administrative career in Canada spans 30 years and is linked by the name Macdonald, our founder. Dr. McCready was appointed Director of the School of Household Science, now the School of Food Science, of Macdonald College in 1939 and continued in that post for 10 years. She then moved to Guelph to become Principal of the Macdonald Institute at Guelph, now the College of Family and Consumer Studies at the University of Guelph, and remained there until her retirement in 1969.

During Dr. McCready's tenure at McGill, both the home economics education major and the dietetics major were strengthened and became models in Canada for undergraduate programs. Macdonald Institute at Guelph did not have a degree program until 1948 and when Dr. McCready accepted the Principalship it was her task to plan the last two years of the curriculum, recruit staff and plan facilities for additional space needed to house the expanding subject matter areas. The program developed steadily and by 1969, when Dr. McCready retired,



Dr. Margaret Scott McCready with Chancellor de Grandpré, left, and Registrar Stephen Olive, as she receives her honorary degree.

Guelph had the largest undergraduate enrolment in home economics in any Canadian university. In 1972, in recognition of her achievements at the University of Guelph, she was made a Fellow of that University.

While at Guelph, Dr. McCready initiated a program of education and development in home economics with the University of Ghana in Africa. So great was Dr. McCready's commitment to this undertaking that upon her retirement from Guelph she chaired the Department of Home Science at the University of Ghana from 1969-71.

Throughout her career, Dr. McCready has given the same quality of leadership to her professional associations as she has to her universities. She has served as President of the Canadian Home Economics Association, President of the Ontario Dietetics Association, President of the Ontario Education Association and in numerous other executive capacities

at the provincial, national, and international level. It is indicative of the impact that she has had on these organizations by their conferring upon her their highest honours. Further, in 1981, upon nomination by the Canadian Home Economics Association, Dr. McCready was made a Member of the Order of Canada.

Dr. McCready's great concern for the health and well-being of families has been reflected in the voluntary service she has given to many organizations. Paramount among these is her participation in the Vanier Institute of the Family since its inception in 1966 and her role as a founding member of the Canadian Freedom from Hunger Campaign and the Consumers' Association. Of course, any recital of her activities would be incomplete without noting her long and warm association with the Women's Institute both in our province and in Ontario.

Because of her great affection for



Diploma graduate Angus MacKinnon of Coati-look been congratulated by Chancellor de Grandpré.

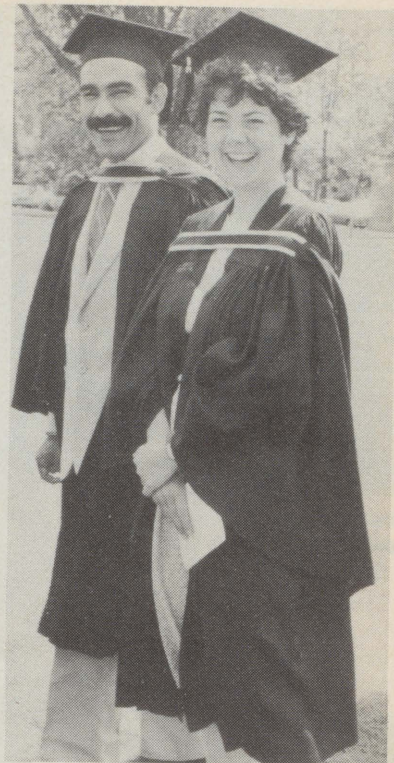


With a helping hand from her son, proud mother goc Tran poses with M.E. Jennaway-Eaman of od Science.

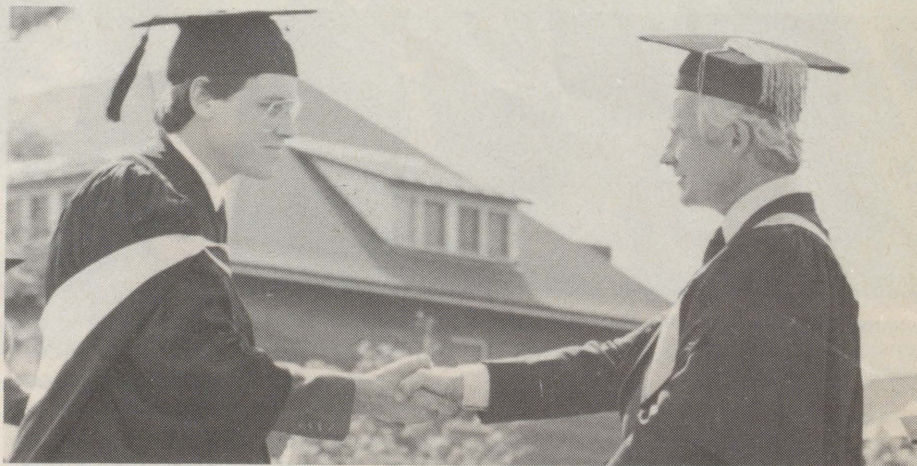
mankind, it is not surprising that Dr. McCready's potential for political candidacy was recognized and she was asked to run in Wellington County in Ontario in the 1972 federal election. Recently, retirement for her has meant more time to devote to public activities, and she has served on the Ontario Advisory Council on Senior Citizens and the Committee on Living and Learning in Retirement at Glendon College of York University.

Throughout her life, Dr. McCready has been challenged to provide leadership to educational institutions, to professional associations, and to service organizations. She has accepted that challenge with empathy, enthusiasm, and an extraordinary vitality.

Mr. Chancellor, may I present to you, so that you may confer upon her the Degree of Doctor of Science, *honoris causa*, a distinguished home economist, Dr. Margaret Scott McCready.



The procession included two happy Master's recipients: Jacinta Ferrari of Fredericton, N.B., and Shahrokh Khanizadeh of Kerman, Iran.



Anthony Peirce of Stanstead, Que., being congratulated on receiving his Master's degree by Principal David Johnston.



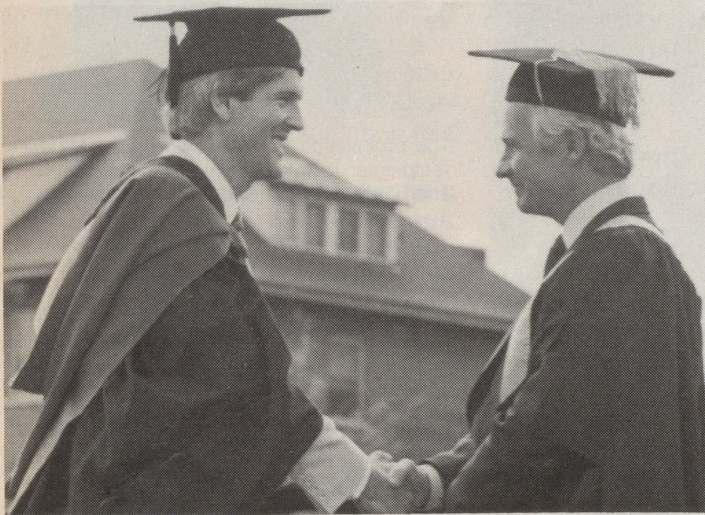
Comparing notes with M.E. Jennaway-Eaman of Food Science are, left to right, Professors David Lewis of Entomology, N. Lawson of the Diploma Program, Guy Mehufs of Renewable Resources, and Bruce Coulman of Food Science.



There were almost as many cameras as there were participants at this year's Convocation.



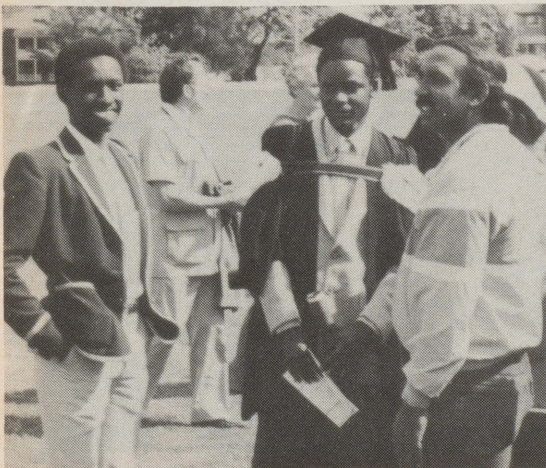
Seen here with her proud family is Louise White of Cambridge, Ont., who majored in Dietetics. Receiving her Bachelor of Science in Food Science, Louise won the Governor General's medal.



Jacques Millette receiving his Ph.D. and being congratulated by Principal Johnston. Jacques is a son of Professor Gerry Millette, recently retired from Renewable Resources.



Plant Science staff compare notes: left to right, Professors R. Reeder, John Bain, K. Stewart, and D. Buszard.



Samuel Mwonga from Nairobi, Kenya, being congratulated by friends David Gatumbi, left, and J. Ramsoondas.



Dr. McCready meets friends and former colleagues at the reception following Convocation, including Professor A.R.C. Jones, left, and Drs. W. and Laura Rowles.

Macdonald, Then and Now

by Dr. Dorothy E. Swales
Emeritus Curator
McGill University Herbarium

A sudden change of outlook came to the Newton family in 1903 when they moved from Old Montreal to a farm in sight of the Laurentian foothills at Plaisance, Quebec. The nearest English school was 2½ miles away at North Nation Mills. Neither villages had ever made newspaper headlines, but they became our universe until the siblings left, one by one, to further their education and to seek positions in the big agricultural world beyond Plaisance. Macdonald College was the intermediate goal, and all five of us studied at that institute of learning. Some of the memories I gathered through the geographically-interrupted years as student, lecturer, housewife, and, finally, Curator of the Herbarium are set down here in the hopes they will bring back happy memories to those who passed this way.

Before leaving the interlude on the farm I should record an historic rural event. It was a summer day in 1910 when an unusual sound came from down the road. We all rushed to the front fence, and it became louder by the second until the cause came into sight — a Ford Touring Car! It was complete with waving, dust-coated passengers. Grannie said it wasn't right to see a carriage go by without any horses, but the rest of us felt we had been given a glimpse of a new and faster world.

My personal dream came true in 1917, when Pearl MacClintock and I were accepted as freshmen in Agriculture, along with 25 boys. My sister Margaret and Pearl Stanford were already in their fourth years and had the distinction the next spring of being the first women in Canada to graduate in Agriculture. Pearl M. and I moved into the Girls' Residence, later called Stewart Hall. We met girls there from distant provinces, from England, from the West Indies, and even from South Africa, from whence they had come by slow boat to Canada.

Room and board were just \$5.50 per week, with extra charges, such as \$1



Dorothy Swales digging hepaticas for her garden in Ste. Annes.

for the season's use of the basement laundry, \$3 for the privilege of consulting with the college doctor for the year, 50 cents per day to be hospitalized in the residence wing called the Infirmary, and 15 cents for meals to be brought to one's bedroom if confined there with a minor illness. Tuition fees were very low due to the generosity of Sir William Macdonald; in fact there was no fee in the first two years for the sons or daughters of farmers in Quebec and the Maritimes, and \$50 for the third and fourth years. Students from other Canadian provinces and foreigners paid more, but remarkably little.

Life in the residence was regimented, but we accepted the strict rules with just a few muttered complaints and the occasional successful attempt to break them. We had to be in our rooms and quiet for study hour, from 8 to 10, and all lights had to be out by 11 p.m. After that there was silence except for the heavy footsteps, of the night watchman, a well-known character called "Daddy Brown." Rules did not prevent us from having lots of fun, attending formal dances,

Saturday night hops, football and basketball games, and the more cultural events in the Assembly Hall. We had debates, put on plays, and held the Green and Gold Revue there, often enhanced by a small college orchestra or the playing of the beautiful Casavant organ. In this connection, from the opening of the college to Dr. Hanson's retirement in 1964, we had a succession of well-trained musicians — G. A. Stanton, E. B. Musgrove, and Frank K. Hanson — on the staff of the School for Teachers, who were appointed in turn as the official organists and who played at all important gatherings in the Hall. The organ boomed out at no affair more exciting than the visit of the young and popular Prince of Wales in the fall of 1919. We were allowed to shake the hand of the man we expected to be our monarch in years to come. It is sad to think of his end as a less glamorous figure in exile in France.

The campus, as we found it in 1917, was probably the prettiest in Canada with its matched buildings and red-tiled roofs set in spacious grounds. None of the staff had cars then, and parking

lots were unknown. Once in a while a living Kreighoff picture would come into view when Dr. Harrison, our Dean, would go abroad in an open sleigh backed by luxurious buffalo robes and drawn by a pair of matched horses, with the coachman, Mr. Heslop, sitting up in front. Although the campus was carless, there were signs of motor progress in the nearby Senneville Road, where Lady Clouston could be seen driving gently in her Baker electric car, or R. B. Angus at a faster rate in his 12-cylinder Packard, well decorated with brass and with huge headlights burning acetylene gas, generated *in situ* by water dripped on calcium carbide. Lady Forget might come along in her Cadillac, her chauffeur sitting in front of a glass partition through which she could communicate with him by speaking tube.

The college announcement of 1917 outlined all courses for first and second years without allowing for any choice of electives such as present students enjoy. Some of the courses were suitable only for those wishing to farm as their life profession; for example, Manual Training, under J. A. Starrak, and Blacksmithing, under a patient Mr. Skinner. In the former we made the wood joints used in farm construction and, in the latter, staples, hooks, and nuts and bolts from iron pieces heated red-hot in the forge and hammered on the anvil. It was fascinating to shape the malleable iron to the form desired under hammer blows, sending red sparks in all directions.

In the last two years we had the opportunity to choose the option we felt most suitable for us, although there were fewer options then than are available now. I chose Plant Pathology directed by a former captain of the British army, Dr. B. T. Dickson, who held the position at Macdonald from 1919 to 1927 and then left for an important post with the Research Council of Australia.

Our class graduated in 1921. Pearl MacClintock had dropped out, to enter again later on, and Mary Lee MacAloney had joined us from Truro in the third year. I continued for an MSc in Bacteriology under the very erudite Dr. F. C. Harrison, who had trained in the Pasteur Institute in Paris and was indeed an awe-inspiring man. After that I said goodbye to Macdonald for eight years, earning my bread and butter and working for a PhD in the West and

in Germany, but I returned to Macdonald as a lecturer in Plant Pathology in 1930. Professor Coulson was the chairman of the department and, as a bachelor, had grave doubts about the wisdom of having a woman around the department. However, after I cleaned and tidied the rather confused drawers in the preparation room, he decided it was not such a bad idea after all.

Pasture Survey

The following summer brought my first field work, on the Pasture Survey in Chateauguay, Huntingdon, and Argenteuil counties, directed by such varied specialists as L. C. Raymond, F. W. McKibbin and G. W. Scarth. Quebec pastures were not supporting the numbers of grazing cattle they had formerly, and it was our job to find the reason why from a study of soil samples and the mapping of the flora in small representative sections of numerous pastures. At the conclusion of our work the committee would then decide what to recommend as financially practical to the farmers for the future. Frank Nowosad was assigned to me as field technician the first year and Peter Stobbe the second and, although there was no blood or tears, there was plenty of sweat on hot July days.

One day when Stobbe and I were working in a pasture near Weir, loud thunderclaps warned of an approaching storm. Stobbe looked uneasy, explaining that he felt like throwing himself in the ditch with every

thunderclap as he was reminded of the time he worked in the fields in Russia and troop trains of trigger-happy revolutionists often rumbled by. They would take pot shots at anything that moved, unconcerned whether it was a domestic animal or a human. "I always dropped to the ground fast," he said.

Life changed abruptly for me in 1934 when I married Dr. William E. Swales, a veterinary-parasitologist on the staff of the Institute of Parasitology, a new building on the campus. Three years later we had a blond son, a black-and-white springer spaniel, a chaloupe for fishing, and a wild-flower garden — in short, everything for a good life. It lasted for 18 years, and then my husband's hard work on the control of parasitic diseases of domestic animals, and his delight in outdoor recreation, was brought to an end, and David and I were left on our own. David later went forward into medicine at McGill and a good family life of his own, while I gradually returned to my botanical profession. At that time, Dr. Brittain was immersed in his research on the birches of Canada and in developing the Morgan Arboretum, and he said I could be useful to him in both activities. The work in the Arboretum led to me adding many sheets of plants from its acres to the small teaching herbarium we had at the college and to my prime interest of later years.

Interest in the arctic was growing rapidly then due to exploration for oil and minerals as well as hydro electric development, and there was great con-

The Newton Family

Robert, William, and John D. Newton all specialized in Agronomy at Macdonald College, first under Professor Leonard Klinck and, after 1914, under Professor James Murray. Margaret Newton obtained her BSA and MSc under Dr. W. P. Fraser of the Plant Pathology Department. By 1923, after holding various positions, all four had obtained PhDs from American universities, later returning to western Canada: Robert and Jack to the University of Alberta and Bill to British Columbia to be provincial plant pathologist. Margaret joined the newly established Dominion Rust Research Laboratory at Winnipeg. As a result of her research on physiologic forms of wheat rust she was elected a Fellow of the Royal Society of Canada and awarded the Flavelle Gold Medal. After some years, Bill and Jack took temporary leaves of absence from their work in Canada to take assignment under the Food and Agriculture Organization (FAO) in Ceylon and Indonesia respectively. Jack was head of the Department of Soil Science at the University of Alberta for 12 years and on the staff for 40 years. Robert, now a Fellow of the Royal Society of Canada, became Director of the Biology Division of the National Research Council of Ottawa. In 1941 he returned to Edmonton to be President of the University of Alberta until his retirement in 1950.

cern as to how these activities would affect the environment. Biologists were in demand to survey the animal and plant life, and our students were soon going north in summers to carry on various projects, including work in the mines. Professor Harry Avison's sons, Tom and Dick, flew to Payne Bay and Hope's Advance Bay, both on Ungava Bay, to work in the mines and brought back the very first tundra plants for the herbarium in 1958. Then David Marsh worked on fish populations in Lac Laberge in the Yukon and thrilled us with a big collection of pressed plants from the site of the "Cremation of Sam McGee," as told by Robert W. Service. David's parents, Bishop and Mrs. Donald Marsh, joined our enthusiasm for building up a good arctic collection in the herbarium, and arranged for their missionaries to send us plants from the mission stations. Friends travelling north to photograph the beautiful tundra flowers contributed generously as well. Dr. Roger Bider and his students spent days and weeks listing the animals and plants of the James Bay Hydro Development country. Robert Hamilton tried to develop a small experimental farm at Fort Chimo, but his efforts to raise domestic ducks were thwarted by hungry Eskimos who did not understand southern agricultural methods. Stas Olpinski studied the Rock and Willow Ptarmigan near Asbestos Hill, and Dr. Roger Titman banded Canada geese at Lac Bienville in the Great Whale area. The northern collection was growing rapidly, thanks to the contributions of these people and we, in turn, supplied the necessary plant names to them.

My bother, Bill, and I spent July 1965 in Inuvik and Tuktoyaktuk and had the privilege of meeting the Belgian missionary, Father Adam, who had the sole garden north of the Arctic Circle in Canada, at 68° 39' N. He received us behind a large desk in his rectory, and said how pleased he was to see someone from Macdonald College as he had Macdonald rhubarb doing nicely in his garden at that very moment. He explained how he started the vegetables, even carrots, in flats in the rectory and moved them out to cold frames in June. As he talked he pulled off pieces of paper from a toilet roll on his desk to service a slight cold and took pinches of snuff in between. He called our attention to the Igloo Church



Bill Newton and Father Adam looking at Macdonald rhubarb in Inuvik, N.W.T.

in sight of the window, which he had designed and for which he had acted as contractor, in spite of arguments from Ottawa that the design would never work. "Look at it," he said with a chuckle. When we visited Father Adam's garden, the covering windows had been removed from the cold frames and growth was phenomenal in the daily 24 hours of arctic sunshine. All the plants except the chives were native to the temperate zone. Father Adam was proud of the chives for he had dug them himself from the banks of the Anderson River, one of the summer breeding places for the black Brant. He remarked they were, "Bon pour un ragoût."

Our collecting was not confined to the north. Dr. Roger Bider and Dr. Robin Stewart initiated a pre-term week in the field at Lac Carré in September 1968 during which the students would collect mammals, insects, and plants, making notes on their habitats and preserving those suitable for winter study in the lab. Field experiments did not always run smoothly as when Dr. Bider's pet crow, Zeke, swooped down from the lab roof to pick up a rare mink frog

being tested for its geotropism. No endearing words from Dr. Bider could persuade Zeke to come within grabbing distance, with the frog still clasped in his beak, and it was lost to science forever.

A field botanist can get into unusual situations as I did when asked to make a check list of wild plants in a Laurentian nudist camp, also used at times as a summer school. The fact that myriads of mosquitoes in the woods drove the campers to the open breezy lake beach made it relatively easy for me to concentrate on my work. The herbarium has plenty of plant souvenirs of that day to prove my statement!

The trend at Macdonald, as in other institutions now, is to give botanical students as much experience as possible with living plants in their natural habitats. With this in view, Marcia Waterway, the present curator, initiated a pre-term week in September 1979 with daily trips from the college to distinctive botanical sites. The idea was continued by Dr. Luc Brouillet and Dr. John Bain with such success it will be repeated annually.

Dr. Denis Woodland arrived in 1972 to take the place of the late Dr. Eric Callen, and to take over the curatorship of the herbarium on my retirement. Soon after he arrived, he arranged to integrate the fine collection at McGill with ours at Macdonald, as more classroom space was needed in the Montreal building. At present we have about 120,000 sheets of pressed plants in our herbarium. We have an active program of exchange and loans as well as increasing numbers of visitors who come to study their special groups of plants here.

The available courses have multiplied, the student numbers and fees have increased, and the whole campus picture has changed markedly since I arrived as a freshman in 1917. New buildings have been constructed, and old ones used by the John Abbott CEGEP. Hundreds of cars, owned by both staff and students, compete for parking space, and lawns have shrunk in size. Only the ghost of Dr. Harrison passes by, in a phantom sleigh drawn by a matched team of horses, but well-trained graduates continue to step out of the college doors to hold responsible positions in every province of Canada and elsewhere, or to demonstrate good methods on farms of their own. "All hail, Macdonald, we sing to thee!

NUTRITION DAY 1984

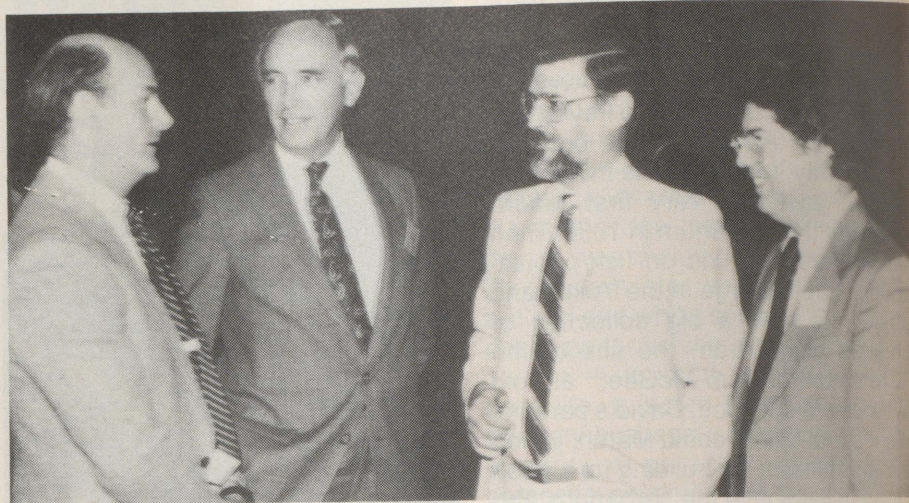
by Henry Garino
Department of Animal Science

On April 3, 1984, Macdonald College was the host for the 3rd Annual Nutrition Day for Quebec Feed Manufacturers. This event was initiated and proposed three years ago by the nutrition group in the Department of Animal Science. Then, through the efforts of the Chairman, Dr. R. B. Buckland, an idea was proposed, discussed and accepted by the Feed Manufacturers of Quebec, for a collaborative effort between Macdonald College and the Canadian Feed Industry Association (CFIA). Subsequently, it was agreed that Macdonald and Laval University would host the program on alternate years in collaboration with the CFIA.

The purpose of Nutrition Day has been to focus on research findings at the above mentioned institutions and industry that might have an impact on the feed industry. The 1984 Conference departed from the traditional "in-house" program to include several outstanding speakers from universities in the United States. This even required a "healthier" budget, and financial support was solicited from the feed manufacturers who, we are happy to say, contributed generously to the cause.

Over 100 people attended the conference, representing industry (25 feed and pharmaceutical companies), Federal and Provincial Ministries of Agriculture, and academic institutions.

As the subject matter of papers presented by the Animal Science staff of Macdonald will be highlighted in future issues of the Journal or has already been featured in past issues, I will only mention the papers briefly here. Professor E. R. Chavez presented a paper on "Vomitoxin in pig diets: how much is too much?" S. P. Touchburn and D. Laurin's paper was on "Dietary energy and excess fat in broilers" (Macdonald Journal, August 1982). K. F. Ng Kwai Hang spoke on the "Importance of milk composition to the cheese factory: yield and cheese quality," and Elliot Block's paper was entitled "Nutritional implications and recent innovations in the etiology and prevention of milk fever



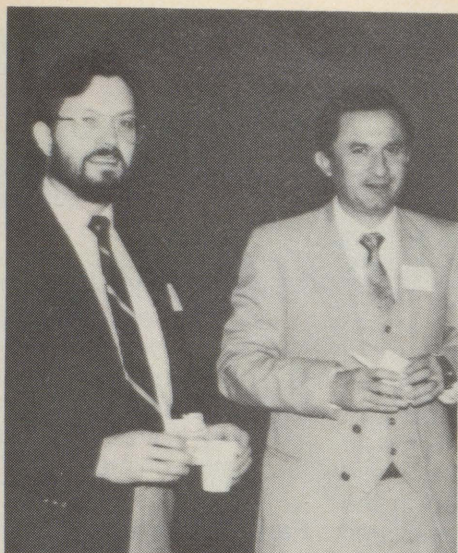
The following photos show some of the participants enjoying a morning break, left to right, Don Green, Hoechst, master of ceremonies for the morning session, R. Authier, Canada Packers, President of the Canadian Feed Industry Association, Quebec Division, E.R. Chavez, and Henry Garino of Animal Science.



Left to right, S.P. Touchburn, Animal Science, T. Klopfenstein, University of Nebraska, Dave Baker, University of Illinois, Henry Garino, and Daniel Boyaud, Canada Packers.



Left to right, Jacques Jalbert, DHAS, L.E. Phillip, Ralston Purina, S.K. Ho, Plant Products Division, Agriculture Canada, and Doug Veira, Animal Research Centre, Agriculture Canada, Ottawa.



Left to right, L. Latrille and Ricardo Seoane from Laval University.



E.R. Chavez, Animal Science, and Henri Likuski, Canada Packers, Toronto.

in dairy cattle" (Macdonald Journal, August 1983).

In this article I will attempt to highlight some of the other outstanding presentations delivered during the day.

The non-ruminant session (a.m.) consisted of five papers, two of them by Dr. D. H. Baker of the University of Illinois and Dr. H. J. Likuski of Canada Packers Research Centre in Toronto. Dr. Baker described the role of synthetic lysine in swine rations in that L-lysine monohydrochloric acid can be successfully used in all types of swine rations to reduce the level of soya in corn-soya diets. He predicted that with rising energy and feed costs and refinement in amino acid production technology, usage of crystalline amino acids by the feed industry will be increased in the next 20 years.

Dr. Henry Likuski of Canada Packers Research Centre spoke on the chemical and biological assays used in determining the available amino acids in feedstuffs for poultry. He gave a most interesting historical description on the application of these methods by the feed manufacturers, including the precision-fed rooster assay which some are now using.

The afternoon session dealt with topics in ruminant nutrition with three of the five presentations given by outside guest speakers. Dr. Terry Klopfenstein of the University of Nebraska spoke on protein utilization by ruminants. This is a "hot" area at present due to the many methods being proposed to more accurately reflect the protein requirements of

ruminants. Dr. Klopfenstein explained the slope ratio techniques he uses whereby protein is fed at various levels and by means of growth responses allows the pinpointing of animal protein requirements. In this technique the net effects on the animal of protein degradation and protein synthesis are also dealt with.

The next speaker, Dr. L. Muller of Penn State addressed the question of the potential use of buffers in feeding dairy cattle. He claimed that buffers may help the dairy cow maintain optimum pH and buffering capacity in the rumen, but they are not the total answer to low fat tests or off-feed problems. In addition, buffers should not be used as replacement for good management.

Dr. L. Latrille, formerly of Macdonald College and now at Université Laval, presented a very informative review of the literature on the status

of potential ingredients for use in milk replacers for calves.

Single copies of the papers presented are available from the Department of Animal Science at a cost of \$2 to cover photocopying and postage.

In closing, it was felt by the Organizing Committee of Dr. E. R. Chavez and H. Garino of Macdonald College and Daniel Boyaud of Shur-Gain that the conference had been very successful as demonstrated by the attendance, the quality of the program, and the numerous remarks from the people that were present. We would like at this time to express our appreciation to the following organizations for supporting the 1984 Nutrition Day: Agropur, BASF, Church & Dwight, Colbourn-Dawes, Cooperative Fédérée de Québec, Cyanamid, Dairy Bureau of Canada, Fortamix, Hoechst, Mutual Products, Nutribec, Pfizer, Phillip Bros., Ralston Purina and Shur-Gain.

Agriculture Canada Team Wins Tournament

Some cool weather reading for hot August days. The 8th annual Invitational Agriculture Hockey Tournament hosted by the Macdonald College staff hockey team was held in April. Being good hosts, the Macdonald team failed to make the championship game but, along with other spectators in attendance, were treated to some outstanding hockey. At the end of regulation time, Ottawa's Agriculture Canada team and the St. Hyacinthe represen-

tatives were tied at one apiece. Still tied after five minutes of sudden death overtime, the teams went to the sixth pair of players taking penalty shots before Ottawa emerged victorious. Hence, the Molson trophy is in Ottawa until next year.

Chipman Chemical, Hoechst, Ralston Purina, Agriculture Canada in Ottawa, St. Hyacinthe, and Macdonald College make up the six-team tournament.

Prof Profile

Thoughts on Retirement

by Professor B.E. Baker
Department of Agricultural Chemistry and Physics

I find retirement a sort of continuing summer recess. Professors usually find the summer months very enjoyable as there is not the burden of lectures, laboratories, meetings, and so on which seem to interfere with pleasant research activities, conferences, travel, and relaxation. I have always liked teaching but now that I'm not called upon to do it I'm happy, and I still have some research to do.

I have always had many research interests but have managed to direct my activities in accordance with the availability of research funds, facilities, and priorities set by factors which are not completely under our own control. My first research interest was chemical kinetics of gas phase reactions; in this field one can set up very tidy, well-controlled experiments using simple molecules in a closed system like a pyrex flask. What a difference from the experiments we are now conducting with chopped alfalfa in 45 gallon drums here on the Macdonald College Farm. After graduation from university near the end of the war, I worked on the synthesis of sulfa drugs used for casualties from the battle field and from too much joy of living. I have always been interested in research with some practical applications, and this led me into close association with industry where the results of research can be brought to fruition.

One of my main areas of research since my appointment to the staff of the Department of Agricultural Chemistry in 1946 has been Dairy Chemistry. My work with graduate students in this field was impeded greatly near the end of the sixties, when the National Research Council discontinued its support of research in this area and closed its dairy research laboratories on Sussex Street in Ottawa. Fortunately, the Quebec Agricultural Research Council continued to support my work on milk protein and the generous support from the United States Atomic

Energy Commission made possible my work on the presence of Strontium 90 and Cesium 137 in the milks of various arctic species including human milk.

I was heartened when Dr. Amer, Vice President, Dairy Bureau of Canada, approached me in 1981 in connection with the establishment of a laboratory for dairy research as part of our facilities for research in Agricultural Chemistry at Macdonald College. Laboratories located in the Poultry Building have been renovated and are now very well equipped for work in the field of Dairy Chemistry; there are already six researchers in the new facility, including Dr. Amer who directs the work of the laboratory. It seems very appropriate that research aimed at the development of new and improved dairy products should be emphasized in an agricultural faculty located in a province where milk is the most important farm commodity.

My immediate research interests are forage preservation, new and improved commercial products from milk, and constitution of dietary fibre and its beneficial effects in the human diet. Some of my research activity has, by luck or by design, necessitated a good deal of travel. For example, I have worked for several years along with my graduate students, on the milks of arctic species, including the Eskimo and the Laplander. This has brought me to remote places in the Northwest Territories, Alaska, and Lapland in Finland. My work on arctic milk was promoted by the interest of the U.S. Atomic Energy Commission in radio-active fallout (Cesium 137 and Strontium 90) in the North and my own interest in the numerous factors which may affect the composition of milk. It is interesting to note, for example, that certain arctic animals produce milk having a fat content of over 50 per cent whereas others produce milk of relatively low fat content, that polar bear milk is similar in some respects to porcine milk, and that harp seal milk undergoes a similar change in composition during the lactation period (approximately 10 days) as does bovine milk produced over a lactation period of several months.

I must point out that milking wild animals can be quite challenging, especially the harp seal which has its young on ice floes near the Magdalen Islands or off the coast of Labrador. I enjoyed my excursions to those ice floes immensely and also my association with the people from the Fisheries Research Board of Canada who assisted me in procuring milk from these fascinating animals.

Farm Background

I regard myself as a farm boy especially in my outlook on life. I was born and reared on a dairy farm located in Stanbridge East. My great grandfather bought the farm when he sold his tannery in 1862. My father expanded the family farm operation and by 1951 when he sold the farm complex we were milking over 60 Holstein cows. The farm where I now reside and where I have operated a small nursery for the past 30 years was my wife's family farm. My wife's grandfather Matthew Saxe Cornell as well as her great grandfather and great great grandfather operated the local flour mill. For many years the electricity in Stanbridge East was produced at the Cornell Dynamo, which was run in conjunction with the flour mill.

You may wonder why, with my farm background and love of the soil, I didn't continue the family tradition. Well, as a boy I was always curious about the nature of things; I was never satisfied with superficial explanations so I continued through school and then to university in order to understand what makes things tick! I chose to study chemistry and felt that the behaviour of matter can best be explained at the molecular level. My choice of a French university such as Laval for post-graduate work was quite unusual for a WASP; however, I was adventurous, and I had always enjoyed my relationships with French Canadians in the farming community around Stanbridge East.

Early Days at Macdonald

I came to Macdonald College as a sessional lecturer in 1946 to teach or-



Over the years: above, teaching glass blowing to a graduate student and, below, milking a husky at Whale Cove, N.W.T.



August 1982 when I retired from my teaching duties. At the outset I lived in the Bachelor's Club located in a wing of the Men's Residence (Brittain Hall) and took my meals at Glenaladale along with confirmed bachelors and spinsters such as Dr. Coulson, Mr. Marton, Howard Pfeiffer, Miss Stickwood, Miss Honey, Jo Smith and others. I left the ranks of the non-committed in 1948 when I married Saxe Cornell. I became warden of Harrison House in that same year, a position I held until 1972 when Harrison House became an office building. Many of the graduate students residing in Harrison House were from far-away lands, and I always tried to make the residence a sort of home away from home for the foreign students. My five children were brought up in this international atmosphere, and I feel that they have benefited from the experience.

Klondike Night

The campus was a wonderful place to bring up children and a good place for grownups, too. Those who were associated with the college during the forties and fifties will recall the Green and Gold Reviews and the many social events at Glenaladale. Klondike Night, which featured a gambling casino, pleasure girls with Millie Blackwood acting as the Madame and Kay Kevan as her able assistant and the police raid, will long be remembered by those present.

My five children all attended Macdonald High School and continued their studies at McGill. Peter, who is the eldest, graduated BSc from the downtown campus and then studied Veterinary Medicine at the University of Montreal. He has been in South Africa since 1975 and now operates two clinics for small animals in Johannesburg. Susan graduated BSc and MSc in Agricultural Chemistry, Phil BSc in General Agriculture, Buddy BSc in Animal Science and BSc in Agricultural Engineering and Jeffrey BSc in Renewal Resources (Landscape Architecture). Buddy and Jeffrey have both spent several months in South Africa working for consulting companies, and Susan is now working on her PhD in Animal Science at Macdonald College. Phil is the only one who has decided to make Stanbridge East his permanent home. He works

organic and physical chemistry; Dr. W.D. McFarlane was Chairman of the Agricultural Chemistry Department. We were both consultants in the food industry and our main source of funds for research was from that sector. Dr. Haddon Common came to Macdonald in 1948 to replace Dr. McFarlane, and soon after his arrival he appointed me assistant professor to take over the

teaching of organic chemistry from Dr. Ross Chapman who moved to the Food and Drug Directorate in Ottawa. I found that I enjoyed teaching and working with young people, especially graduate students and I have also enjoyed my close association with Dr. Common, Dr. Anastassiadis, and the late Professor Henneberry.

I lived on campus from 1946 until

for the Miller Holdings and Investment Co. which operates an Arboretum in West Brome.

Agricultural Chemistry

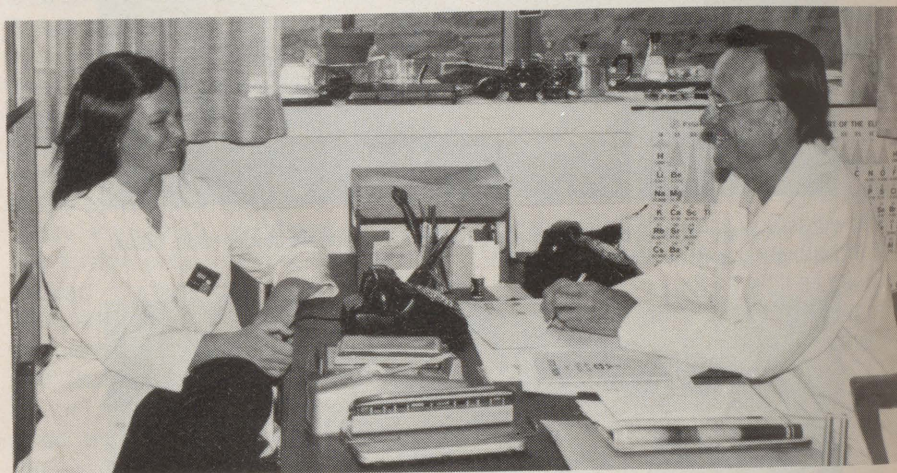
The staff of the Agricultural Chemistry Department has always carried quite a heavy teaching load. For many years Dr. Common taught Biochemistry and Food Chemistry, Professor Henneberry taught General Chemistry and Analytical Chemistry, and I taught Organic and Physical Chemistry. Later, Dr. Anastasiadis took over Physical Chemistry and some of the work in Food Chemistry. Classes were relatively large, especially during the peak years of the early fifties and lectures and laboratories were also scheduled on Saturday mornings. I recall that attendance was not too good on Saturday mornings following the Junior or Senior Proms. Those who did drag themselves out often appeared in formal dress; presumably the party did not end when the music stopped and the patrons and guests of honour had gone home!

Up until the introduction of the five-year degree in 1966, the Chemistry Department laid on a graduate course on the Industrial Utilization of Farm Products; some will remember the course as "Hog Bristles." It was more or less a continuation of a course given by Dr. W.D. McFarlane entitled Chemistry and dealt specifically with the industrial processing of agricultural products such as wheat, vegetable oils, milk, and meat. I have been told by many former students that this was the most useful course that they had taken at Macdonald. I sincerely hope that a similar course may again be offered to our graduate students in Chemistry so that they may be better equipped to take up employment in the food, feed, and related industries.

I was somewhat instrumental in the merger of the Departments of Agricultural Chemistry and Agricultural Physics. It seemed to me a logical merger as our teaching and research interests were similar and neither discipline was committed to any one area of agricultural science such as plants, animals, soils, or engineering but had important implications in all of these areas. The new Department of Agricultural Chemistry and Physics has many active research projects and at the present time there are 18



In January 1984 visiting the boys — Buddy, Peter, and Jeffrey — who are working in South Africa. The baby is a new grandson.



Daughter Susan, who is working on her PhD in Animal Science, drops into the office for a chat.



Doing field experiments with Dr. I. Alli, also of Chemistry and Physics.

students registered in Agricultural Chemistry, which is a considerably larger number than ever before in the history of the two Departments. The Department has succeeded in attracting two vigorous research units, namely the Muscle Biochemistry Laboratory (Agriculture Canada) under the direction of Dr. Zarkadas and the Dairy Chemistry Laboratory (Dairy Bureau of Canada) under the direction of Dr. Amer.

The Agricultural Chemistry Major is a relatively new name for the Chemistry Option and is for students who look to careers in Chemistry in the food, feed, and related industries and in the public service. It has become increasingly important in recent years that our chemistry students qualify for membership in the Quebec Professional Order of Chemists. For a chemist to practice the profession in

the Province of Quebec, he must be a member of the Order and this requires a prescribed number of credits in Inorganic, Physical, Organic, Analytical, and Biochemistry. I think that our degree in Agricultural Chemistry was one of the first in the province to be accepted by the Order of Chemists.

I like to think of my major achievement in terms of my work with graduate students. We have published together quite a number of papers on a wide variety of subjects. I have had a lot of fun working with these graduate students, and I hope that in some small measure I have succeeded in imbuing them with a love for chemistry.

Associations with Industry

I have always been interested in seeing the results of research put to practical use in industry whenever possible. I suppose that I have had some success in the development of industrial processes related to the synthesis of sulfa drugs and certain adhesives for the plywood industry as well as methods for the preparation of protein hydrolysates for the food and pharmaceutical industries.

I have been associated with food and related industries in one way or another since I came to Macdonald in 1946. My first association was with Champlain Milk Products which later became Champlain Industries. Their generous contributions to research in the Department at a time when government funding was difficult to come by was greatly appreciated. The Company, by the way, still supports our work in the way of undergraduate scholarships. The Department has had many good friends in the milk processing, meat processing, flour milling and oil seed industries, and they contributed greatly to the success of a graduate course entitled Industrial Utilization of Farm Products which, as I pointed out, the Department gave. More recently my association with Nash Foods, Comet Confectionery, and numerous companies involved in the manufacturing of forage preservatives has been most enjoyable, and all have contributed very generous financial support to our research work. I have found that industries are quite willing to spend money on projects which they consider might be beneficial to them either in the short or long

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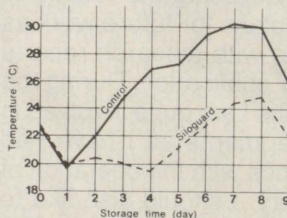
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Treatment	Weight Loss (%) (average 5 bales)	Dry Matter Loss (average 5 bales)
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Silo Guard	16.0	6.6%

Results of research conducted at McDonald College on hay baled at 22.5% moisture. Dry matter loss was reduced by over 50% and weight loss by 30%.



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term. Once the research funds have been procured, one must always keep in mind the companies' objectives when the research is being executed. Remember that a day of reckoning will come when your productivity from their view point will be on the line.

Canadian Institute of Food Science and Technology

The Canadian Institute of Food Science and Technology was originally called the Montreal Food Technology Association. The group which first conceived the idea of having such an association in Montreal comprised, if I recall correctly, Mr. Price (Canada Packers), Mr. Maybe (Fry Cadbury), Mr. Eva (Ogilvie Flour Mills), the Staff of the Agricultural Chemistry Department (Macdonald) as well as Dr. Denstedt (Biochemistry, McGill). Some of the first meetings, which were held to discuss the setting up of the organization, took place at Macdonald College. The organization has spread across Canada and is now a national organization with its own official journal, the editor of which is a professor at Macdonald College.

Looking Back

When I came to Macdonald in 1946 there was an air of great stability; Dr. Brittain was a very astute Dean, and he didn't ruffle many feathers. The presence of professors like Cameron, Laird (Dean of Education), Ness, Crampton, Rowles, Lods, Hamilton (Lionel), McFarlane (W.D.), Coulson, Swales, Maw, Raymond, Duporte and Mr. Mutton (Librarian) added to the apparent stability of the place. When Dr. Dion was appointed Assistant Dean in 1955, he told us that an Assistant Dean was a mouse learning to be a rat; he was appointed Dean in 1956. The campus soon became tumultuous; change became the watch-word, and *panta rei* (everything is in flux) the motto. Buildings and Grounds (Physical Plant) was completely overhauled, departments like Microbiology, Animal Science, and Engineering grew into strong academic and research units and Bob Ferguson, the "Policeman," was replaced by a squad of Philips Security Men.

Our move away from the glorious old buildings and the "Sacred Oval" in

the 70s never worried me a great deal. I loved the old buildings and beautiful grounds but I must say that I go along with Lovelace who wrote "Stone walls do not a prison make nor iron bars a cage." If it was no longer feasible for us to occupy the classic old structures, I accepted it, and I am pleased to see them used for other educational purposes. It seems to me that the John Abbott CEGEP with its enrolment of several thousand can be a great source of students for the faculty; it is our responsibility to show them that Agriculture, with its many ramifications, can be a fascinating field for study that can lead to exciting and rewarding careers.

The new building, where most of the faculty departments are now located, is clean, efficient and makes for good communication, especially when departments are engaged in joint projects. My only reservation is that it is a "hermetically" sealed unit with little or no place for expansion; there are no basements or garrets to renovate and occupy.

Looking Ahead

I hope to carry on with my research at Macdonald with the able assistance of Dr. Alli in whom I have the greatest confidence. Now that I spend only one or two days per week at Macdonald at the most, I spend most of that time with Dr. Alli discussing the results of research and plans for future work as well as helping with research reports and papers for publication. During the summer months I am quite involved in our field experiments as I have had some experience with the operation of farm machinery. I should also like to improve the productivity of my own farm by ditching, clearing land, and doing some reforestation.

Travel has always been a hobby and now that I have more free time I plan to explore remote places which I have not yet visited. I very much enjoy visiting our former chemistry students who are located in every continent except, I suppose, Antarctica; they are always anxious to hear the latest news about Macdonald and invariably indicate that the years they spent at Macdonald were the most pleasant of their lives.

And so like Ulysses, "I cannot rest from travel: I will drink life to the lees."

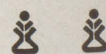
Seeking Solutions

Biological herbicides may be the solution to many problems for the environment created by chemical herbicides. A long-term objective of research by **Professor Alan Watson** of Plant Science is to develop commercial biological herbicide products that can control major Canadian weed problems. Short-term objectives for Professor Watson's work are being directed toward the biology of disease organisms and propagation of these organisms. Professor Watson has already collaborated on a successful patent for control of Velvetleaf through a specific disease organism. His new work should produce more weed control choices that may prove to be beneficial to our field crop production in the future.



Soil degradation and corn silage quality are being studied by a team consisting of **Professors I. Alli** (Agricultural Chemistry and Physics), **A.F. Mackenzie** and **G. Mehuys** (Renewable Resources). The connection between these two problems is not obvious at first glance. However, the connection is through management — can good fertilization techniques and interplanting with clover reduce soil degradation yet improve silage quality? The team has begun field work, and by fall will have plenty of silage for quality studies.

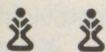
Corn is notorious for its negative effect on soil quality — loss of organic matter, increased erosion, etc.; yet corn produces bountiful quantities of forage for our dairy farmers. Perhaps improved techniques developed from this study will allow farmers to have their cake and eat it too — better silage produced on better soils.



Harvest and post-harvest methods and techniques used for storage of fruits and vegetables will be examined by **Professor V. Raghaven** and his research team in Agricultural Engineering with an eye to reducing losses, increasing storage life, and cutting storage costs. Their work will con-

continue efforts that have been made over the past four years to learn and promote novel techniques for vegetable storage. Although many problems have been identified, Professor Raghaven initially will look at harvesting and handling methods as well as respiratory activity of produce in controlled atmospheric storage.

From these studies, new ideas for improved harvesting techniques and post-harvest handling methods will be available for the food industry.



Drs. E. Donefer and E. Block of the Department of Animal Science have received a grant from the Quebec government (CRSAQ) to determine if the association of poor quality and good quality feed can increase feed consumption by ruminants.

Feed associative effects may exist between two species of forages or between two forage qualities of the same or different species. Preliminary information indicates that this effect can improve dry matter intake of good and poor forages fed in combination with a higher total intake than for either of the forages fed alone. The possibility exists that a smaller amount of high quality forage fed in combination with a lower quality forage can result in improved utilization of the poorer feed.

In condition of optimum management and climate, dairy producers try to produce the best quality forage to maximize profits by reducing the amounts of cereal grains and oil seed meals fed to livestock. Climatic factors may reduce forage quality, however, and force farmers to feed more grains and oil seed meals. If poor quality forage intake can be increased as suggested by Drs. Doneter and Block, real benefits to dairy producers in reduced feed costs will occur.



Ketosis, acidosis, and other metabolic disturbances caused when dairy cows are abruptly switched from hay to silage and high concentrate rations may be alleviated by the use of bicarbonate buffers, or so believes **Professor Elliot Block** of the Department of Animal Science. Such problems are particularly acute with high producing cows. There are problems, however, with the methods and timing of offer-



Evidence of tree damage was observed last April while on a field trip to White Face Mountain to inspect, as guests of the University of New York at Albany, the acid precipitation sampling operations.

Acid Rain

Following the catastrophic spreading of tree damage in large parts of continental Europe, which has been widely linked to acid deposition ("acid rain"), similar symptoms of environmental damage started to be noticed in North America.

With support from the Atmospheric Environment Service (of Environment Canada) the Department of Agricultural Chemistry and Physics has started an interdisciplinary research project to determine the acidity (ion concentration) in various forms of precipitation, particularly the little-known supercooled winter fogs in the elevated regions of the Laurentian shield, trying to link them to meteorological situations and source regions, and to make preliminary studies of possible chemical imbalances in foliage produced by "acid rain." The

team consists of Professors G. Paquette and P. Schuepp (Department of Agricultural Chemistry and Physics), A.R.C. Jones (Department of Renewable Resources), H. Leighton (Meteorology, McGill campus), and Dr. G. Tomlinson, senior advisor of Domtar Inc., and member of the Canada-U.S.-Mexico Tri-Academy Committee on Acid Deposition).

So far, passive and active (aspirating) samplers for acid fog have been developed, foliage samples from Quebec to Nova Scotia are being analyzed, and the Morgan Arboretum is serving as an outdoor laboratory to study the nature of deposition on trees washed to the root zone by rainfall.

Professor P. Schuepp
Chairman,
Department of Agricultural
Chemistry and Physics

ing bicarbonates. Also, when bicarbonate is removed from cows in mid lactation will milk production suffer? These questions are being studied by Professor Block, using a portion of the Macdonald College dairy herd. Any improvement in dairy cow performance will have enormous benefit to Quebec's predominantly dairy agriculture.

According to Professor Elliott Block, the incidence of milk fever in northern Quebec dairy herds is relatively high due to the inability of the farmer to

lower the calcium-to-phosphorus ratio (Ca:P) in rations for prepartum dairy cows. It is known that the incidence of milk fever increases as milk productivity increases; therefore, there is potentially a large dollar loss to the industry, due to milk fever, resulting from milk loss and the loss of expensive high producing cows. The goal is to develop a procedure to allow farmers in northern Quebec to feed legume-grass hay mixtures to prepartum dairy cows without causing milk fever.

Computers and Food Management

Across Canada Dietitians are implementing computer assisted systems into Dietary/Food Service Departments in health care institutions. The range of uses for computer assistance is extensive. Systems in use vary from inventory control to a total operational coverage. What two Mac Grads have done in one institution follows:

Margaret Galloway, B. Sc. (H.Ec.) '45, and Clara Lee Pi, B. Sc. (F.Sc.) '75, have spent a lot of time over the past four years working with a computer consultant to develop and implement a computer assisted Food Management System into the Food Services Department of the Burnaby Hospital, Burnaby, B.C.

Margaret, who is the Director of the Department, and Clara, who is Assistant Director — Clinical and E.D.P. Services, have now implemented Phases 1 and 2 of the program and were proceeding (at the time of writing) with the necessary development stages for a third Phase expected to be started by April 1984.

Their philosophy was to develop a program that would support the food services operation as it exists not as it might be envisioned by a computer professional. Special emphasis was put on using the perspective of the user, the patient in the system design. While the program has resulted in an improvement in the cost effectiveness of the hospital's food service, the emphasis on patient orientation has greatly increased the effectiveness of nutritional support and the quality of patient nutritional care now provided by the department.

The first phase was a menu and nourishment processing system. This system makes use of a large patient data base which contains such information as diet orders from the patient's physician, patient's food preferences, and nutritional modifications pertinent to the patient. Individual personalized daily menus and meal tickets for the trayline assembly are printed using this data. Features of the system include menu review, inquiry on the status of patients' diet orders, and on-line entry of modifications.

A cost analysis showed a 1.6 year payback period and a total net saving of \$216,670 over a five-year period. Much of this was to be achieved by



Clara Pi with central processing unit and tape drive.



Marg Galloway discussing progress with programmer.

time saving which allowed for reduction in and reassignment of staff. Normal attrition took care of reduction.

In addition, implementation of the system contributes to other improvements in the food services and to reduction in errors — one Key Entry replaces numerous time consuming and error-potential changes, where the same data needs to be changed in several places. Manual revision and

updating of menu tallies was replaced by computer print-out of food production orders. Accurate legible labels for nourishments, and meal tickets for trayline use were printed from patients' data base. Key entry of changes into the menu data base decreased menu revision time from days to minutes.

Phase 2. The Food Production Cost Control System provides for computer generated yield adjusted recipes, storeroom requisitions, reports for advance withdrawal from freezers, forecasts of food requirements, and production schedules.

Current costs for patient food and for cafeteria food are calculated. This system, which was to be fully operational in early 1984, will be a tool for both quality and quantity control in the food production area.

Phase 3. Still in its development stage at the time of writing is a Nutrition Status/support system that will provide for computerized nutritional assessment, nutrient analyses, identification of patients at risk, and the establishment of appropriate nutritional care levels.

The intention was to have this system in place, if at all possible, before the end of 1984.

Fall Field Day and Handicraft Sale: An Annual Event

Each year the Morgan Arboretum Fall Field Day is held in the Arboretum at the Conservation Centre in November. This year it will be held on Saturday, November 24th. Woodlot machinery and tools and instruments are demonstrated and displayed. Demonstrations in the past have included the Agriwinch supplied by Forano Ltd., Homelite chainsaws and weed cutters by Homelite-Terry, the Port-A-Log from the Forest Engineering Research Institute of Canada, and the Morgan Arboretum hydraulic wood splitter.

While the demonstrations are going on the Morgan Arboretum Volunteers hold a sale of handicrafts in the Conservation Centre to raise funds for the Association. The results of this special activity by the volunteer group are highly gratifying and, in fact, the handicraft sale tends to steal the fall field



Mike Folkema of the Forest Engineering Research Institute of Canada in Pointe Claire demonstrates the Port-A-Log.

day show! If you would like more information about this year's event,

please telephone us at: (514) 457-2000, local 250.

A.C.H.E.S.

The annual conference of the Association of Canadian Home Economics students (A.C.H.E.S.) was held in Montreal between January 11 and 14, 1984. The sessions, held at Macdonald College and the downtown campus of McGill, were attended by over 50 students representing 14 universities in Canada with home economics or related programs. This conference was of particular importance to the School of Food Science because 19 years ago in November 1965, the first A.C.H.E.S. conference was organized by the Macdonald Home Economics Society.

This year's theme was "Our Future Marketplace" and organizer Sylvie Dorbeil, a home ec ed major and Fariba Sabet-Shargi, a dietetics major, along with their fellow students planned a program which looked at emerging opportunities for the home economist, career management, and the role of the computer in the profession. Members of the Quebec Home Economics Association as well as local members of the Canadian Home Economics Association assisted with the

conference and organized a panel of speakers which included Margaret Wallace, President of the Canadian Home Economics Association, and Montreal members: Jean McHarg, Cécile Hamel, Nancy Durnford, and Diane Shink.

In welcoming the delegates to the conference, Dr. Shirley M. Weber, the Director of the School of Food Science, reviewed the background of the Association, noting that six of the "charter" member Universities: Acadia, Guelph, Manitoba, McGill, Mount St. Vincent, and Saskatchewan were still members of the group. In the intervening years, membership had grown to include the School of Family and Nutritional Science of U.B.C., the Faculty of Home Economics at the University of Alberta, the Department of Home Economics at Brescia College, the Department of Food, Nutrition, Family and Consumer Studies at Ryerson Polytechnical Institute, Home Economics Education at U.N.B., Ecole de Nutrition et d'Études Familiales at Université de Moncton, Department of Nutritional and Consumer Studies at St. Francis Xavier University, and the Department of Home Economics at

the University of Prince Edward Island. Dr. Weber pointed out that at the early meetings of the Association emphasis was placed upon the importance of graduate studies in furthering the aims of the profession. She noted that the need for advanced degrees is even more important today and encouraged the delegates to consider graduate school as a career step after their undergraduate education.

A varied social program was planned in connection with the conference and included a luncheon at Mac prepared by the students in Professor Diane Raymond's Food Service Management course, a wine and cheese reception by C.H.E.A. and Q.H.E.A. members and dinner at popular Montreal restaurants. The students also managed to squeeze in a bus tour of Montreal, a skating / walking outing at Beaver Lake on Mount Royal, shopping and a taste of Montreal night life — all that in just three days!

Congratulations to the students in the School of Food Science and their faculty representative for A.C.H.E.S., Elizabeth Jennaway-Eaman, for a most informative and successful conference.

Soil Degradation in Quebec

Is there cause for concern?

by Professor Guy Mehuys
Soil and Land Resources Section
Department of Renewable
Resources

The soil is our most basic and precious resource, one that is essential but fragile and very limited in area. Soil is an essential resource because it is one on which the very survival of any civilization depends and because it controls the supply of our most basic need: food. Many people falsely perceive the soil as an easily renewable resource. In fact, the process of soil development is so slow that it takes nature centuries to form a productive topsoil. To the extent that one can degrade a soil much faster than one can rehabilitate it, I would suggest that the soil be considered a non-renewable resource. Finally, good farming land is very scarce in Canada, particularly in Quebec. Dividing the total land area of southern Quebec into capability classes for agriculture (Table 1) reveals that the largest portion is Class 7 land, i.e., land totally unfit for agriculture and, together with water, this makes up 75 per cent of the total land base in southern Quebec. Land which is at least arable (Classes 1-4) constitutes only 16 per cent of the total area, while the best Class 1 land is practically non-existent in the province. Of the land in the first four classes, more than half is in Class 4. Land in this class imposes severe limitations on arable agriculture. There is, however, a relatively large area of unclassified organic soils (Class 0)

which can be very productive.

The extent of Quebec's agricultural soils is thus very limited. It is precisely the better soils that have disappeared at an alarming rate due to urbanization, construction of highways, airports, and industrial parks, both because populated centres are already established on these soils and because it is easier to build on them. With no arable land left to be developed, it is essential that we conserve what little we now have if agriculture is going to be sustainable over the long term.

The natural vegetation of Quebec, or its climax vegetation as it is called, is the forest. Ever since land was cleared by the original Habitants, soil degradation has taken place. It is only during the past few decades, however, that the process has been accelerating. This is due to the shift towards intensive mechanized agriculture brought about by the need for increased efficiency on the farm, and for higher productivity from each farm worker.

Over a period of 26 years, the number of farms in Quebec has decreased from almost 100,000 to 43,000 (Table 2). The total farm area has likewise decreased from 6.8 million to 3.7 million hectares. Much of the once-cleared marginal land has now been abandoned and has reverted to bush or forest. During those same years, the number of agricultural workers has experienced a two-third decrease and the ratio of agricultural workers to the total number of workers has gone from 17 per cent in 1950 to

a little less than three per cent in 1976. Many fewer workers are thus producing much more than was produced 30 years ago, leading to a 50 per cent rise in the total productivity index of farming in Quebec.

This increased productivity has been made possible by the replacement of labour by capital with the availability of bigger and better machines, the use of improved crop varieties, the ever-increasing reliance on chemical fertilizers, and the

Standing Senate Committee on Agriculture, Fisheries, and Forestry Looks at Soil Degradation

The Senate Committee, Chaired by the Honourable Herbert O. Sparrow, held hearings in Ottawa during March and April on "the examination of the subject-matter of soil and water conservation throughout Canada."

Professor Guy Mehuys, whose article appears on these pages, is in the Soil and Land Resources section of the Department of Renewable Resources and appeared before the Committee as an expert witness for Quebec on Thursday, March 22. Dr. Lien T. Chow of the Agriculture Canada Research Station, Fredericton, New Brunswick, also appeared that day. Dr. Les Lavkulich, Department of Soil Science, University of British Columbia, Dr. Murray H. Miller, Department of Land Resources Science, University of Guelph, Dr. Don Rennie, Department of Soil Science, University of Saskatchewan, as well as experts from the Federal Departments of Agriculture and of the Environment also testified.

In May the Senate Committee embarked on a cross-country tour with interested individuals being invited to present their opinions. Professor Gerry Millette, also of Renewable Resources, and Professor Stuart Hill of the Depart-

Table 1. Capability classes for agriculture in southern Quebec

Class		Area	Area
		10 ³ ha	%
1		60	0.2
2		950	3.0
3		1300	4.2
4		2800	8.8
5		1600	5.0
6		9	0
7		22000	66.8
0	organic	1250	3.9
	water	2500	8.0
	urban	60	0.2
Total		32000	100.0

Source: Lajoie, P.G. 1975. Agricultural lands in southern Quebec: Distribution, extent, and quality. Agriculture Canada Publ. No. 1556

widespread use of pest and weed controls. In addition, cropping practices have intensified. When and where possible, farmers have abandoned their traditional animal production systems and specialized in cash crops. The area devoted to grain corn, for example, has increased almost fourfold over the past 10 years (Table 3). Notice the huge jump from 1980 to 1981 during which the area in grain corn grew from 90,000 to 162,000 hectares. Increases in areas cropped to silage corn have roughly paralleled those devoted to grain corn. Such global figures do not, of course, tell the whole story. Behind them are hidden the changes that have occurred in crop-

ping practices: abandonment of the traditional five-to-seven-year rotation, which included several years of forage crops, in favour of monoculture. This has occurred on the best agricultural soils and in areas with the best climate.

While areas in small grains have not changed appreciably (Table 3), farmers have shifted away from oats and grown more wheat and barley. The Quebec Department of Agriculture has just launched a new incentive program to increase small-grain production in the province. These new grain crops will not be seeded in areas suitable for corn but will more likely replace permanent or semipermanent pasture.

It is precisely because of this specialization on farms and intensification of farming practices that we now face problems of soil degradation. The kinds of soil degradation most prevalent in Quebec are acidification of the soil, degradation problems associated with artificial drainage, loss of organic matter, deterioration of the soil structure, soil compaction, and erosion.

Soil acidification

Almost all soils in Quebec are naturally acid. This is due to the acid nature of the parent materials of soils and to the removal of bases over the centuries of soil development by percolating rain, which is naturally acid as well. Most Quebec soils have pH values in the range of four to six. Some sandy soils developed under forest can

have pH values as low as three. While soil acidification has been controlled for many years by liming — a widely used and well-developed technology in Quebec — the problem appears to be accelerating as a result of large applications of nitrogen fertilizer, used especially for corn production, and also because of acid precipitation due to atmospheric pollution. Thus lime use does not seem to be keeping pace with increased soil acidification. Therefore, acidity is a potential degradation problem although it is easily, and for the time being, fairly cheaply, remedied.

Drainage

A second soil degradation problem is associated with subsurface drainage. Subsurface drainage in Quebec has increased tremendously over the last 10 to 15 years and is probably the factor that has contributed most to improving the productivity of the land. However, two types of drainage problems have resulted in soil degradation. When drains are installed in fine sands or silts, the drain lines themselves can silt up. This results in the deterioration of the soil structure around the drains with a consequent reduction in water flow into the drains. In some cases, the drains cease to function after a number of years.

In practice, silting up of drains can be avoided by wrapping the drains with filter fabric during initial installation. At the present time, several types of filter fabric are being tested at Macdonald

ment of Entomology appeared at the public hearings which were held in Montreal.

Problem areas include wind and water erosion, salinity, and intensive cultivation. Committee members were told that erosion and degradation of the soil has reduced the amount that Ontario farmers make each year by about \$68 million. Intensive farming practices that at one time benefited farmers are now resulting in longer-term costs. In the 50s and 60s Ontario farmers were told to tear down fence lines to make larger, easy-to-till fields; this removed the windbreaks that had prevented soil from drifting away.

In the prairies salt is seeping into the soil from underground deposits, thus turning fertile ground into wasteland. Over 2.2 million hectares of land in Alberta and Saskatchewan have been rendered useless, costing the farmers more than \$400 million in lost production. Last winter Manitoba farmers were given correspondence courses on soil management. Soil erosion by surface runoff is the most severe and widespread soil degradation problem in the Maritimes and is particularly severe in potato-growing areas. The problems in Quebec are outlined by Professor Mehuys in his article.

The aim of the Senate Committee is to arrive at possible solutions to the problems of soil degradation and to suggest policies that the government may implement, perhaps as new laws on soil conservation.

Table 2. Farming has intensified in Quebec over the past 35 years

	1950	1976
Number of farms	95,777	43,097
Total area farmed	6.8×10^6 ha	3.7×10^6 ha
Number of agricultural workers	255,000	78,000
Agricultural/total workers	17.3%	2.9%
Farming productivity index (1961 = 100)	82.3	123.4

Source: Claude Bernard, Environment Quebec (personal communication)

Table 3. Extent of selected crops in Quebec (1972-1982)

Crop	1972	1979	1980	1981	1982
	hectares				
Grain corn	46,100	81,000	90,000	162,000	172,000
Oats	275,000				163,000
Barley	17,000				121,000
Wheat	16,000				32,000
Total small grains	308,000				316,000

Source: Canada Grains Industry. 1983. Statistical Handbook 1982. Canada Grains Council, Winnipeg, Man.

College. The ideal fabric will not reduce the performance of the system but will prevent the fine particles from entering the drainlines.

A more recent problem associated with drainage is that of excessive drainage in coarse-textured soils with low water holding capacity. It is estimated that some 150,000 to 200,000 hectares, principally in the Sorel and Drummondville areas, may be affected by excessive drainage. The drainage system has done its job too well; so little water is left in the soil during the summer that the crops suffer from drought.

A possible solution is the use of subsurface irrigation whereby some of the drainlines are blocked and water is pumped back into them. Water rises from the drains into the soil profile by capillarity. Again, research is under way to determine the feasibility and cost of such subsurface irrigation systems.

Loss of organic matter and its consequences

Cultivating land intensively is not conducive to the maintenance of organic matter levels in the soil. An adequate supply of organic matter is particularly important in fine-textured soils — clays and clay loams — in which organic matter acts as the principal binding agent of the aggregates which together make up soil structure. Poor soil structure due to low organic matter leads not only to reduced nutrient availability and poor aeration of the root zone of crops, but also to reduced infiltration of water, increased water runoff, and a higher risk of soil erosion.

In Quebec decreases of 30 to 35 per cent in soil organic-matter levels have been identified for cereal-hay rotations and up to 60 per cent under subsequent row-cropping systems, compared to virgin forested soils. Large areas in monoculture corn now have organic-matter levels in the three to four per cent range whereas originally they might have had eight or 10 per cent. Loss of organic matter is a major problem on intensively cultivated fields and one that is very difficult to remedy: it cannot be done over the short term.

To raise the organic-matter level of one hectare of topsoil by a mere one per cent requires 20 tonnes of decom-

posed organic material (i.e. soil humus). It takes many more times this amount of fresh organic matter to produce this 20 tonnes of humus.

Loss of organic matter has taken place over the past half century because not enough organic material is being returned to intensively cropped soils and intensive cultivation increases organic matter decomposition. Specialization of farms into cash crops versus animal-production units is largely responsible for this. Areas under continuous row crops receive too little addition of organic matter, while high concentrations of animal wastes in other areas have created serious pollution problems (e.g., the Yamaska River basin). Organic materials are thus being exported as animal feeds from cropped areas; unfortunately, it is not economically feasible to truck back the manure for soil improvement purposes.

Deterioration of soil structure

The other three causes of soil degradation — deterioration of structure, compaction, and erosion — all stem, directly or indirectly, from reduction in soil organic-matter levels. As mentioned earlier, organic matter acts as the principal binding agent of aggregates under our temperate climatic conditions. Loss of organic matter induces a loss of stability to aggregates which become susceptible to destruction by raindrops, cultivation, machinery traffic, or even animal trampling.

Unfortunately, deterioration of a stable structure is not easily quantified. Researchers have been battling for years to find a quantitative way of expressing not only structure but also its stability; a solution to the problem is not close at hand. Manifestations of poor structure are more easily measured, however. As larger aggregates are destroyed, the finer particles tend to block large pores of the soil, resulting in increased bulk densities, reduced aeration, increased water content, and reduced infiltration rates. If water does not enter the soil, it will either pond at the surface or run off, which in turn can result in soil erosion.

Currently, there are no reliable data to show that deterioration of structure alone is responsible for reductions in yield, although deleterious effects on structure may have been compen-

sated for by increased use of fertilizers and better varieties over the years.

Soil compaction

The farming community has been sensitized to the problem of soil compaction to the point where it is probably considered the most serious cause of soil degradation in the province. Large areas of the St. Lawrence lowlands are affected, especially fine-textured soils developed from marine sediments of the former Champlain Sea. These are very deep soils and very susceptible to compaction.

Compaction is an increase in soil bulk density as a result of repeated tillage and the opportunity offered by large and more powerful machinery to work the soil when it is too wet. In the past, when a soil was too wet, machinery was unable to go onto the land. Now machinery is so powerful and well-equipped that it can travel onto a field in almost any condition. Compaction by machinery is maximum in a wet field, while damage to the structure by soil-engaging tools occurs when the soil is either too wet or too dry.

Compaction is additive over the years at depths below the plough layer. Some contractors are offering subsoiling services to farmers to try to alleviate the soil compaction problem. It is not clear, however, how successful these subsoiling operations are, nor how long their effects might last. It is thought that subsoiling will have to be repeated every three to five years if present cropping practices do not change. Better tillage and cropping practices are probably a better long-term solution.

Soil erosion

The last but not necessarily the least soil degradation problem is soil erosion. In Quebec we must be concerned primarily with erosion by water. Erosion by wind is limited to some organic soils. Erosion is an insidious phenomenon and not usually noticed by the farmer until a great deal of damage has been done. During the 1960s, some research was conducted in Quebec to determine soil losses under various cropping systems. Annual losses ranging from 1 kg soil/ha under hay to 60 t soil/ha on bare soil were reported for slopes ranging from seven to 15 per cent. While 1 kg/ha might

rightly be considered an insignificant loss of soil, at a rate of 60 t/ha it would take only 35 years to lose the entire topsoil.

Areas most affected by rill and gully erosion are those with hilly topography. The Lac St. Jean area has approximately 40,000 hectares affected. Charlevoix County is also affected, as is the Appalachian region. Erosion can be quite severe in local areas of these regions, and signs of erosion can be found even in the relatively flat St. Lawrence Valley. For example, in Chateaugay County, approximately five per cent of the total area has been affected to some degree by erosion.

Sheet erosion is less noticeable. No study has yet attempted to quantify soil losses on the flatter, fine-textured soils found in the St. Lawrence Valley, where slopes may range between only

one and two per cent, but are usually very long. It is believed that erosion of these soils is considerable judging by the sediment loads found in the rivers, especially in early spring and after sudden summer storms.

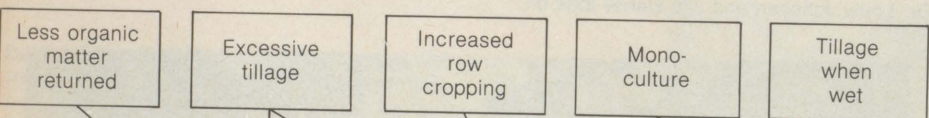
Although the technique of ploughing fields into domed beds improves the surface drainage properties of the soil, it also produces much steeper slopes in otherwise relatively flat fields. Visual evidence shows that soil is, in fact, being transported into inter-bed rows and then flushed out into river or drainage ditch. Slumping of river and ditch banks is also a common sight in the province, and this contribution to soil loss from fields should not be overlooked.

It is often easier to discuss the various types of soil degradation separately, as I have done. It must be realized, however, that they are inter-

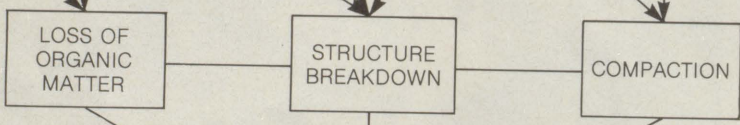
related and rarely occur singly (Figure 1). The more intensive cropping systems which are popular and profitable now lead to lower returns of organic matter to the soil. They have also meant intensive tillage, in many cases, and increased row cropping, even to the point of monoculture. The bigger and more powerful machines have permitted this even when the soil was not optimally suited. The lower return of organic matter, excessive tillage, and increased row cropping all result in loss of organic matter. Increased row cropping and monoculture eventually lead to structure breakdown. Monoculture, and especially tilling when wet, produces compaction. But loss of organic matter results also in structural breakdown, which in turn increases the susceptibility of a soil to compaction. Loss of valuable topsoil by water erosion is often the outcome of other types of soil degradation. With runoff water and transported sediments go expensive plant nutrients, pesticide residues, and other toxic materials. These are sometimes re-deposited at a lower position on the slope, but eventually reach water bodies which then become polluted. Impact on aquatic systems are quite important, creating turbidity, sedimentation, denitrification of the water bodies, and, in some cases, toxicity to fish or drinking water supplies.

Until now the Department of Agriculture has not shown a great deal of interest in soil degradation problems in the province. The Department of the Environment, however, is working on a policy paper on the subject. As the Department's primary concern is with the pollution of water bodies, its interest, of course, lies with erosion. The Department is nevertheless willing to look at the measures that might be required to arrest or reduce the erosion of crop land into water systems. At the federal level, there is a flurry of diverse activities all aimed at studying the severity of soil degradation problems throughout the country. It will probably not be too long before Canada and Quebec have comprehensive conservation laws. In the meantime, the most difficult task will be to convince the farmer and the public in general that conservation pays in the long run. Remember, the soil is an extremely fragile and very valuable resource and thus should be protected at all costs.

PRACTICES



DEGRADATIONS



IMPACTS

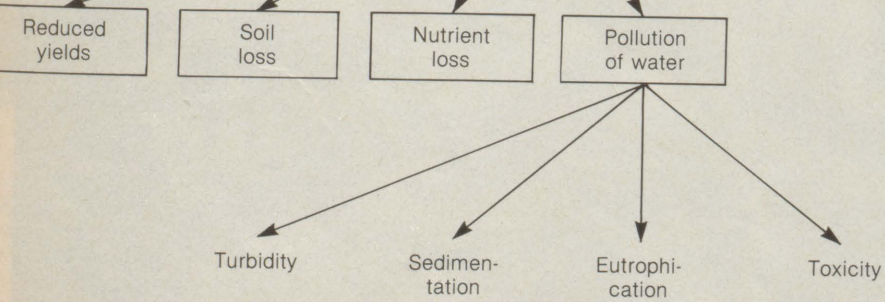


Figure 1. Interactions between practices leading to soil degradation and their impacts are complex.

The Importance of Farm Practice

by Jim Currie
Diploma Program

No other change to the Diploma Program has been so radical, nor so important, as the introduction of a farm practice component. Ten years ago the program was saved from extinction by the sponsorship of the Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec. An integral part of that sponsorship was the development of practical work periods which would have students see the theory that they learned in class put to work in the field.

Farm Practice is actually divided into three sections. Each section offers more, and demands more, of the student. When the students first arrive to register for year I of the program, they are rushed right into Introduction to Farm Practice. This is a credit course, but one in which the students, interacting with each other, are as valuable as the teaching done by the instructors. Within the group of students, there are some who have extensive farm experience and others who have the minimum required four months. Quite often, the experienced students end up helping the less experienced students. In a course like Introduction to Farm Practice, Macdonald is much better off than other Quebec schools. We have a working farm, with experienced staff, to do the demonstration work.

The second and third segments of the Farm Practice program are spent on commercial farms in Quebec — somewhere. Students have worked in places as far removed as Shawville and Shigawaki. The students choose their own farms, as long as they meet the requirements of the program. Top of the list of requirements is that the farmer is willing and able to teach. The students then spend 15 weeks each summer on the farm (usually two different farms) learning. Meanwhile, the staff of the Diploma Program spend their summers running the back roads of Quebec, checking the students' progress.

Never before, nor in any other province, have students been able to get this sort of experience. It has raised technical agriculture studies in Quebec above the other provinces, and Macdonald again leads the rest.



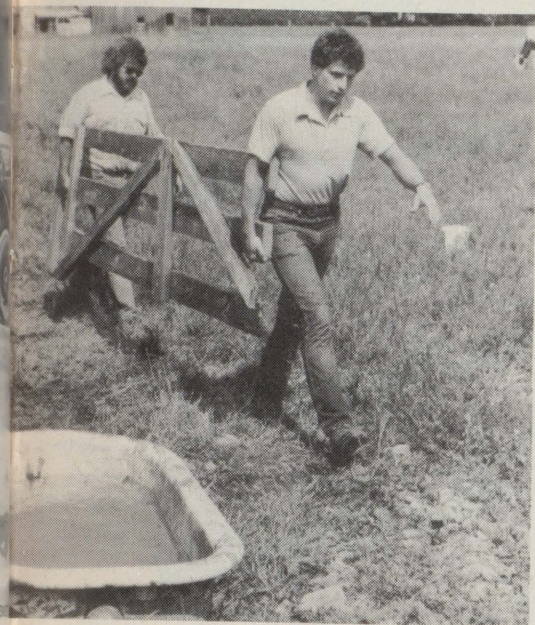
Second year Diploma student Greg Dowling and his brother do a repair job on a swather while Dr. Louis Johnson and Jim Currie look on.



College herdsman Gordie Beaulieu gives some "hands-on" instruction to a group of first year Dips.

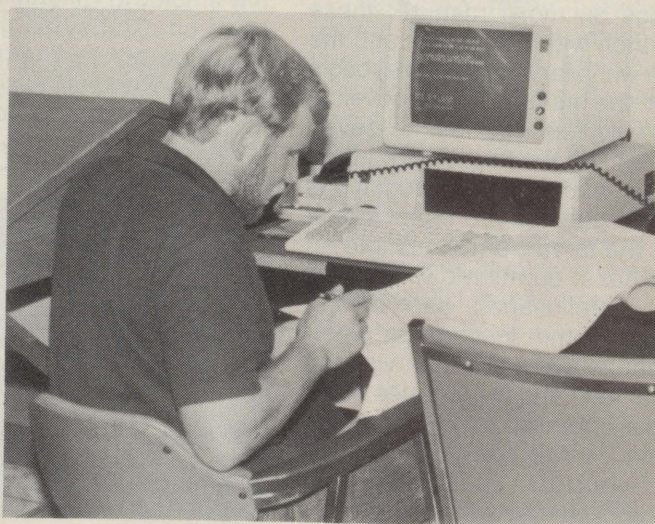


Soils Professor Guy Mehuis introduces his first year Diploma students to the soils around the College.



Summer practice in the College greenhouses was the choice of second year Diploma student Monique Paré. Below, Farm practice also includes "keeping the books." Stephen Heggie, a second-year student works in the computer room.

Beef, dairy cattle, and sheep: students get a well rounded education at Dr. Johnson's farm in Senneville. Above Rick Allan, BSc (Agr) '82, and Peter van Doninck work at the dairy barn while, below, Greg prepares to work with the sprayer. Peter is a prospective Diploma student.



Right: the finer points of forage harvesting are explained by College field foreman Marc Boileau to first year Diploma students.

House Flies, Poultry, and Insecticides

by Professor David J. Lewis
Department of Entomology and
Professor Sherman P. Touchburn
Department of Animal Science

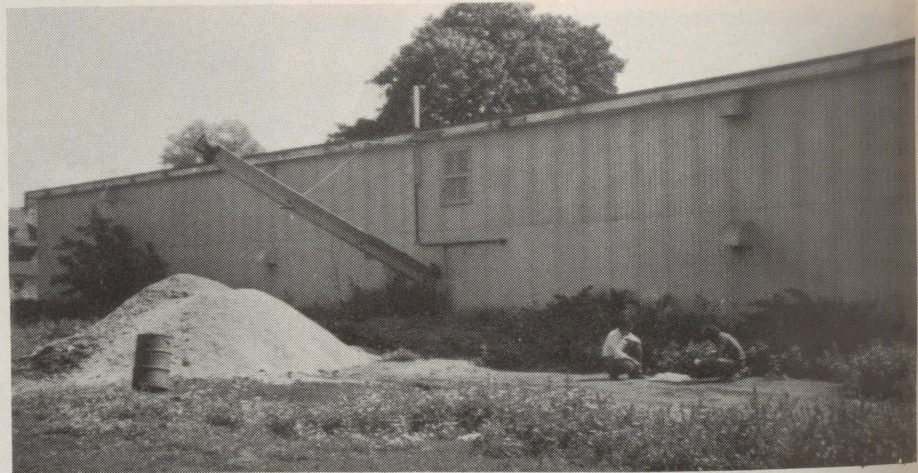
Modern poultry production has been characterized by high densities of birds with concurrent manure management problems. This is particularly true in caged-layer operations. With changes in production practices, conditions for fly breeding have also been modified such that in many situations fly populations have increased.

One of the most common pest flies encountered in poultry operations is the house fly (*Musca domestica*) which breeds primarily in the manure. The life cycle of house flies is fairly typical for all types of flies which develop in manure. The female deposits 100-150 white eggs on moist manure; these usually hatch within 24 hours and the emerging white larvae (maggots) begin to feed on the manure. Larval development usually requires four to seven days; when full grown they are about 12 mm long and seek drier conditions in which to pupate. The pupal stage, in which the larva transforms into an adult fly, has a duration of five or six days, is barrel-shaped, dark brown, and about six mm long. Upon emergence, adults mate and then visit the manure to feed and the females begin laying eggs approximately four days after mating. Temperature is a very important factor in house fly development, because it not only influences the time required for development from egg to adult, but also influences the survival of the immature stages.

There are many ways to control house flies in or near poultry housing; sanitation is usually the first and most important step. The best method to reduce house fly populations within poultry housing is to remove the manure. While this obviously eliminates much, if not all, of the breeding areas, storage and disposal of the manure may create problems. Some manure management schemes provide for the storage of manure under poultry cages for long periods of time. If this is done in such a way that the manure is maintained in the driest condition possible, then the fly problem will



Leghorn hens in typical caged-layer housing.



Manure samples being positioned near natural populations of manure-breeding flies.

be kept at minimum. If this procedure cannot be implemented, then weekly removal of the manure supplemented by insecticide application may be the only other alternative. Control of house flies in many poultry operations is attempted primarily by the use of chemicals, both adulticides and larvicides. Adulticides usually involve residual surface application and space sprays, whereas larvicides are applied directly to the manure. The latter is generally ineffective in poultry housing since fresh manure constantly covers and dilutes the treated manure. When insecticides are used, instructions for use should be followed precisely, particularly to ensure that the birds are

not in contact with compounds which may be absorbed by the body or transmitted to the eggs. Contamination of water, feed, and feed troughs must also be avoided. Biological control agents may also be effective in reducing house fly populations in some situations, especially when integrated with other control strategies. Collection or trapping (e.g., electrocuters) of adults will greatly reduce fly activity within poultry houses. The basic components of an integrated fly control program are known for many caged-layer operations but adaptation to various types of housing and management practices is often difficult.

In 1983, Larvadex™, a synthetic in-



Samples of manure exposed to egg-laying flies.



Development of house fly larvae (maggots) in non-treated manure.

sect growth regulator manufactured by CIBA-GEIGY, was tested at the Poultry Unit of Macdonald College for its regulatory effects on house fly development in poultry manure. Larvadex™ is administered to poultry via the feed; it is one of several new insecticides which are commonly referred to as oral larvicides. Studies at Macdonald involved manure collected from white Leghorn layer hens. Following applications of the larvicide to the feed there was 100 per cent control of the house flies and nearly 100 per cent control of other similar flies. There were no ap-

parent detrimental effects on the hens nor on egg production when compared to the non-treated control birds. Researchers in other regions have reported no palatability problems with feed containing Larvadex™, no harmful effects to many of the beneficial predators of house flies or scavengers of poultry manure, and no effect on egg quality. Although its precise biochemical mode of action is not clearly understood, Larvadex™ is highly effective at very low concentrations as a stomach poison against young fly larvae. Treatment leads to

retarded growth of larvae, interferes with the moulting process and prevents normal pupation and adult emergence.

There are many benefits to be gained from the use of compounds such as Larvadex™. Effective control is obviously achieved, fly populations do not have the opportunity to increase their numbers, larvae are killed before they liquify the manure, and since growth regulating effects have been observed only on species of manure-breeding flies, they fit very well into integrated pest management programs.

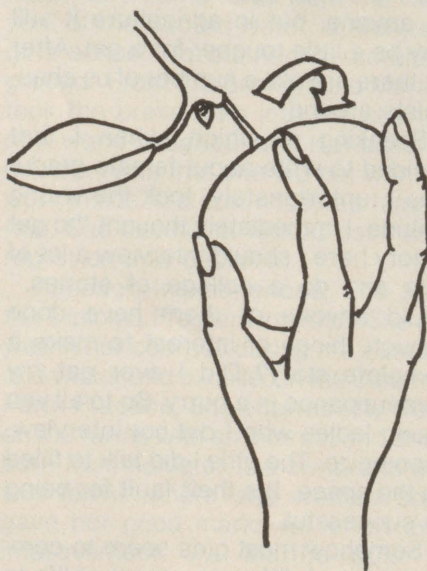
Don't Squeeze Me — I'm Yours!

by Professor D.J.I. Buszard
Department of Plant Science

The way you pick an apple can affect its storage and eating quality: the soft flesh is easily bruised, by squeezing or dropping, and the skin can be punctured by careless handling. Broken skin and bruises provide ideal sites for the entry of microorganisms which lead to rotting and spoilage.

When the apple is picked the stalk should remain attached to the fruit and separate cleanly from the spur at the base. If the stalk is separated from the fruit, it provides another entry point for microorganisms. If the spur is torn by rough removal of the stalk, then next year's flower buds may be damaged and fewer fruits will be produced.

If you remember the following do's and don'ts, you should have a good harvest this season and a better crop next year.



The correct way.

1. Do hold the fruit in a cupped hand with the finger tips open;
2. Don't grasp the apple with the fingers (this leads to bruises and sometimes puncture marks);
3. Do gently twist and tilt the fruit upwards to separate the stalk from the spur;
4. Don't pull the fruit off with a sharp tug; this could pull the stalk out or damage the spur;
5. Do place the apple carefully into the picking container;
6. Don't drop the fruit from any height, especially onto already picked fruit in the box.

Undamaged fruit can be stored in a cool basement wrapped in paper. Bruised or broken fruit should be used immediately; they make great apple sauce.

DIPLOMA

CORNER

by Jim Currie
Assistant Director,
Farm Practice
Diploma in Agriculture Program

This year McGill women are celebrating the 100th Anniversary of the first female graduate of the university. Here in the Diploma Program we can only claim 70 years since our first woman graduated. That was Miss Katie Broad, Dip 1915. Unfortunately the story of that young lady and even her whereabouts are unknown. Possibly one of our readers might want to write that story some day.

In the early years of the Diploma Program women were a rarity. Of course, at that time, it would require a girl of great spunk, drive, and character to challenge the male dominated world of agriculture. Then again, at that time agriculture was farming, and farming was much more physical than it is today. That in itself doesn't exclude all women nor does it include all men. But given the choice of slaving in the fields or anything else, the "anything else" might look appealing. It is easy to see how and why farm work was divided. Men, out of chivalry, would do the heavy, monotonous work and try their best to protect the women from the menial tasks of the farm. Meanwhile, they needed someone who could manage the bookwork, the homework, and the social requirements of a community-minded family. So the duties were assigned and peer-pressure kept them that way. Periodically one might find (in the privacy of their own home, of course) a clandestine cowgirl or a closet chef. But never in public; after all, this was in the days when men were known as gentlemen, not chauvinists.

So we (the Diploma Program) acted out our yearly play with primarily an all-male cast until the end of World War II. That was the turning point. While the men were overseas shooting at each other, women found out that all the jobs that men used to do were not necessarily that hard. In fact, with



Dip graduates in the editing office of DHAS: standing, Shelley Deacon, Dip. '81, seated, left, Sue Childs, Dip '66, and Muriel O'Reilly, Dip. '69.

modern equipment some jobs were darn near enjoyable. The wages were not bad either. Suddenly women were more independent, career oriented, liberated. They started doing the work they enjoyed, not the work they were told to do. They trained for non-typical jobs. They joined the Diploma Program. Gentlemen became chauvinists.

Every year now we are graced by the presence of eight to 10 young ladies who hope to succeed in the world of agriculture. We are pleased at this since it adds a lot of character to each class. However, we always worry about how well our graduates make out in the world after Macdonald. Life in the business world can be rough for anyone, but in agriculture it still may be a little tougher for a girl. After all, there are still a number of us chauvinists around.

Speaking of which, when I first decided to write about female graduates I, unfortunately, took the wrong attitude. I immediately thought "to get a story here I should interview a lot of girls and do a collage of stories." Could anyone of them have done enough things of interest to make a complete story? Did I ever get my comeuppance in a hurry. So to all you young ladies who I did not interview, I apologize. The girls I did talk to filled up the space. It's their fault for being so successful.

Somehow most girls seem to combine a lot of different aspect of life in a short period of time. They are career

women, students, wives/homemakers/farmers, sometimes all at once. For instance, one example is Martha Bowman (Sullivan), Diploma 1977. When I interviewed Martha, she was working in the editing room of DHAS (Dairy Herd Analysis Service) here on campus. Two months later, she and her husband Stuart are farming in New Brunswick and she may already be a "Mom."

Martha came to Macdonald from a farm background near Rexton, New Brunswick. She had worked on the farm all her life and participated in local 4-H activities. Her reasoning behind taking the Diploma Program was that whether she became a career woman or a farm wife, her life was agriculture and she should know what was going on. While at Macdonald as a student, her future started to form when she met Stuart. She tried at one point to get away when she spent the summer, after graduation, working in a greenhouse in Niagara Falls. Then she moved home to help on her parents' beef farm. However, true love won out and she returned to Macdonald in September to plan for her wedding with Stuart.

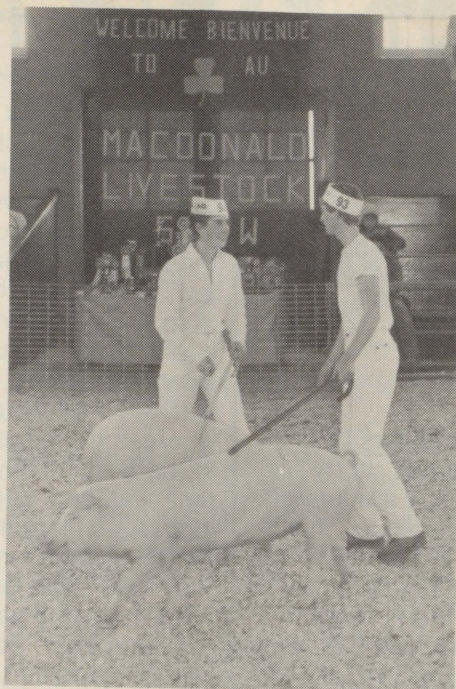
Her persistence won her a part-time job at DHAS that same autumn. Her ability carried her to a job in the editing office that next spring. Editing with DHAS requires someone with a background in agriculture plus technical training. Editors correct any mistakes made by the computers before the

reports are sent to the farmers. The position requires precision, diligence, and understanding of dairy herd management. It says something when all of the editors are Diploma graduates, and all are girls. The other three girls: Sue Childs, Dip '66, Muriel O'Reilly, Dip '69, and Shelley Deacon, Dip '81 all have these same qualifications. They all are using their training and experience to pursue valuable careers in agriculture.

Martha was able to expand her job to cover dealings between DHAS and ROP (the national dairy recording system), DHAS and the Canadian Goat Society, as well as editing for the Maritime branch of DHAS. At one time she was sent to Saskatchewan to train their personnel on the DHAS system.

Meanwhile at home, she and Stuart were becoming farmers. For a while they owned a house in Hudson and travelled to their work at Macdonald like normal commuters. This was too boring. They had a higher energy level than that, so they went farming. They rented a farm near Lancaster, Ontario, and started a dairy herd. They bought, raised, and bred Holstein heifers. Unfortunately by the time the heifers calved, quota prices were way out of range to allow milk sales so they started raising veal calves. At one point, Martha and Stuart would get up every morning, milk their eight to 12 cows, feed up to 25 calves, and then drive the 60 miles to do a day's work. Most people would have dropped after a day or two like that, but Martha went on to fill her evenings with community activities. She taught 4-H, participated at local fairs and craft shows, and took lessons in making pottery. She also joined the Women's Institute and the United Church women's group. The people in these associations will certainly miss Martha and Stuart since they have moved to New Brunswick.

With an energy level such as she has, there is little doubt that she and Stuart will be successful in their new careers as farmers. They are taking over her parents' farm with plans to convert it from beef to dairy. The project will take a few years, since they plan to develop a 35-to-40 cow herd where none exists today. In the meantime, Martha will also take care of a U-pick strawberry farm, a small fruit and vegetable operation, and take care of Stuart and a family. She will probably get back into church groups,



Martha Robinson, Dip. '81, was Grand Champion Showman at last winter's Livestock Show. She is showing here with Alex Milne of Howick, first year Dip student.

community activities, and catch-up with old friends in the area. Good luck to them as they accomplish their life goals.

Another Martha, who we have been lucky enough to have graduate from the Diploma Program, is Martha Robinson, Dip '81. This Martha is definitely a different character from the previous one. A "city girl" from the beginning, she showed up in the program with the minimum required experience. As she puts it, she joined the program on a whim. She came to us from the Couvent of the Sacred Heart, a Montreal girls' school. Not our normal recruiting ground! From this background Martha took the brave step into the strange new world of agriculture. Her basis of decision was that she did not want to work inside in a preconceived female role. She has never looked back with regret on that decision.

Although inexperienced, she took the Diploma Program in stride. She did well in her courses during the autumn and winter and excelled in the Summer Farm Practice. She entered into work on the farms with an interest and drive born from naïveté. The owners of the two farms where she worked both gave her good marks for effort and improvement. As Martha puts it, "those two summers were the most valuable part of the course for me.

They let me find out that farming is what I want to do, and that I can do it."

However, she also realized that farming at present would be virtually impossible for her. She made the decision to carry on for a Bachelor's degree in Agriculture. Although impressed by the jobs that her classmates took after the Diploma program, she realized that she did not have the experience needed and she would have to make it up by increased education. Off she went to Nova Scotia Agricultural College. She took that route because she wanted to avoid the CEGEP system and because she wanted to see the Maritimes. She also liked "Swampies." In Nova Scotia she learned that she hopes some day to settle in that province. During her time at NSAC she took another break to work on a dairy farm in the Annapolis Valley.

Martha returned to Mac last year as a second year degree student. She readily admits that being a degree student is not nearly as much fun as being a Dip, but it will eventually open more doors for her. Graduation in 1985 will offer her the choice of a career as anything from an agricultural salesperson to a research technician. It might also allow her to continue on for further degrees.

Her future is unfolding, but while she's here she is all student. She is enjoying student life to the fullest by joining in as many activities as possible. One of her loves in life is the college woodsmen team (oop! woodswomen). The camaraderie of this group has made the hard work of studying worth-while. This poor, inexperienced little city girl also showed a few farm folks how to show animals this past winter. She emerged from the Macdonald Royal Livestock show as "Grand Champion Showman." Not bad for a self-proclaimed free spirit who joined the Diploma Program on a whim.

At this point, this elaboration of the female contribution to the Diploma Program must stop. My apologies go to Donna Bider, Diploma graduate of 1980 who submitted to an interview fully expecting to be included in this article. Donna, your story will be told; it is interesting enough to warrant more space than is available in this issue. Besides my chauvinistic attitudes have taken enough of a crushing defeat for one article.

FUN FACT FABLE FICTION

by Ralph H. Estey
Emeritus Professor
Department of
Plant Science

The Year of the Rat

On February 2, 1984, the year of the Rat began for millions of people all over the world, particularly those of the Buddhist religion. Centuries ago, Buddha called all the different kinds of animals in the world to join him for a New Year's feast and celebration, but only 12 responded to this unusual invitation. Buddha was so pleased with those who came that he named a year in honour of each — to recur in a 12-year cycle for eternity. The first to arrive at the feast was the rat (Shu); therefore, the rat was the first to receive Buddha's special honour and consequently the "year of the Rat" begins every cycle in the 12 year series.

Hong Kong, Singapore, and doubtless several other jurisdictions with large Buddhist communities are issuing gold and silver coins for 1984 which feature a rat in the place of honour.

Incidentally, 1983 was the year of the Pig, because the pig was the last of the 12 animals to arrive for Buddha's feast.

Milk the Cat?

If we swill the pigs when they need to be fed and water the cows when they are thirsty, why don't we milk the cat when it gets hungry?

All the world is queer
save thee and me, and
even thou art a little
queer. Robert Owen

Eversharp

A sharp tongue is one instrument that gets sharper through constant use.

Forty

In the Middle East and adjacent areas "forty" is often used as a numeral of indefinite value. This is indicated in the "forty petals" of Greek for a rose, the "forty thieves" of Ali Baba, and the "forty days" and "forty years" of the Bible, none of which were intended to mean precisely forty. The word forty also has an indefinite value in the expression "forty winks," meaning a short nap.

In British history the period just before the repeal of the corn laws is frequently referred to as the "hungry forties." Sailors call the stormy region between 40° and 50° South latitude the "roaring forties."

The word quarantine comes from the latin word for forty. It originally, in 1374, referred to the forty-day period that a ship suspected of carrying bubonic plague (Black Death) had to remain outside the port of Venice before anyone on it was permitted to go ashore.

Throughout history various groups, beginning perhaps with the forty judges of ancient Athens, have been referred to as "The Forty." The French Academy, founded in 1635, has long been known as "The Forty" or "The Forty Immortals."

Everyone knows that "life begins at forty!"

Made in Quebec

Two of the largest ships ever built, up to the middle of the nineteenth century, were constructed on the Island of Orleans, a few miles down river from Quebec City. The sailing ship, "Columbus," launched July 28, 1824, was 301 feet long, whereas the largest ship in the British navy at that time was only 244 feet long. A still larger vessel, the 304-foot "Baron of Renfrew," was launched from the same yard the following year. Both ships carried squared timber across the Atlantic. The Columbus made a successful trip to England with her load of lumber but foundered on the return trip to Canada. The Baron of Renfrew had worse luck. Her voyage across the Atlantic was successful, but while being towed in the English channel during some brisk winds she broke loose and was eventually driven ashore and broke up on the French coast. The owners of these two enormous ships did not go bankrupt because they had wisely insured their hulls for a combined total in excess of \$5 million.

A Religious Question

Is the Judeo-Christian religion, with its teaching that the earth and all that was created with it are for man's use (Genesis 9:2-3), somehow responsible for many of our current conservation and environmental problems? Would there be fewer problems if the religion of the industrialized nations had been based on one of the pre-Christian cults that had great reverence

for the earth and living things?

Chamber Music

The Nursery Pied Piper Company, Ltd. of London, England, patented (BPI 409 803) a musical device to assist the toilet training of infants. As the child sits on the pot its weight closes a switch which connects a battery to a pair of stainless contacts placed at the bottom of the pot so as to be electrically connected by any urine or feces that falls on them. When the electrical circuit is thus closed, the resulting electric current drives a small motorized music box and the child's efforts are rewarded by music — chamber music.

The Genesis of a Church

The Primitive Baptist Church, one of the very few religious denominations native to Canada, was begun by the Rev. George W. Orser and three of his nephews, Charles, Elijah, and Moses, in the small community of Carlisle, near Hartland, New Brunswick, in November, 1871. For many years Primitive Baptists along the Saint John River valley were known as "Orserites." By 1880, they had built more than 40 churches in New Brunswick, Nova Scotia, and the State of Maine. No biography of George Orser has ever been written, and no letters by him nor photographs of him are known to exist. He died in 1885, but his Church lives on.

Interesting and Informative

We find the Journal both interesting and informative. It is interesting to find out what fellow Mac grads are doing, especially those who are also working outside of Canada. We will shortly be returning to Canada for a year of work and look forward to receiving our next Journal.

Gary Selig, BSc (Agr) '71
Kinshasa, Zaire

The "New Look"

I find your "new look" A1 and join with you in hoping that more grads agree.

Nikolai Nikolaiczuk,
Baie d'Urfé, Qué.

An Enjoyable Issue

I am late in writing to say that there were many articles that I really enjoyed in the last August issue. The discussion between Helen Neilson and Florence Farmer, the memories of Dr. DuPorte, the photo of Dr. Lods, L.C. Raymond, J.N. Bird, and R. Summerby, and the one of Nella McKellar and Gwen Sydney. I read where Jim Gordon was a "Pirate." He is in St. Andrews now with Fisheries. Bob Cook, another grad, is Director of our Biological Station.

I enjoyed it so much I shall subscribe to see if I recognize any more of my old friends.

Frances Wren,
St. Andrews, N.B.

Keeping in Touch

It was good to be back on the campus again. A great deal has changed since 1957. I would like very much to subscribe to the Journal in order to keep more in touch in the future.

Elwood G. Hodgins
Vice-Chairman,
Canadian Dairy Commission.

A Very Good Year!

We would like a subscription to the Journal. While we were visiting Ken Burke and his family (also Agriculture 1955) the other night, I read the February issue of the Journal and found it most interesting. The article by "Doc" Rowles brought back many fond memories, especially the pictures which seemed to be "vintage class of '55" — a very good year.

Frank W. Anderson, B.Sc. (Agr.) '55 St. Catharines, Ont.

More on Maple

Professor A.R.C. Jones's article "Maple Cinderella Syndrome" (Macdonald Journal, November, 1983) continues to draw reaction on radio, at meetings, and in letters. We continue the discussion on this most timely topic with a letter from Dr. Carl E. Atwood, a noted retired forest entomologist.

"A week or so ago H. Gordon Green on CBC's "Fresh Air" quoted (from your article in the Macdonald Journal) your suggestion that the dying of maple might be due to the effect of tent caterpillar attack. Perhaps some of my observations on this subject may not be amiss.

"I have observed four major tent caterpillar outbreaks and have not observed any wholesale death of trees. However it may occur — the acid rain is a complicating factor. As you undoubtedly remember from my lectures, we once had an outbreak of the striped maple worm on Manitoulin Island which lasted seven years and left many sugar bushes in such shape that they were cut for fuel wood. Forest tent caterpillar attacks usually last only four years; moreover, they defoliate the trees early in the spring and the trees re-foliate whereas the striped maple worm is a mid-summer insect and the trees have no chance to recover.

"We have about 400 acres of abandoned farmland north of Barry, much of it in maple, white ash, oak, etc. A few years ago we had a four-year attack by tent caterpillars, followed in the third and fourth years by heavy populations of the prominent *Heterocampa guttivitta*. The result was that the trees were essentially bare much of the spring and summer as H.g. is a late

feeding insect and got what would have been the second crop of leaves. The result was that there was so little shade that mullens, usually a pasture plant, were growing in the midst of a maple forest. Whether as a direct result of defoliation or a combination of it plus drying out of the forest floor, we had many stag headed trees plus a good deal of outright mortality. Standing dead maple trees make excellent firewood if cut soon enough.

"Dr. Brittain often used to take me to inspect the woodlot during my Macdonald stay."

Carl Atwood,
Toronto, Ont.

In part, Professor Jones replied:

"On reviewing the climatic calamities, the general location of the maple affected, and tent caterpillar history of the region, it was apparent that the major culprit in the rapid decline and death of sugar maple could well have been forest tent caterpillar. I did not rule out other predisposing factors such as unfavourable location, thin soil, overpasturing, aging of trees, overtapping, high vacuum, abusive land use, as well as acid rain, all contributing to a disastrous weakening of the trees in many cases. However, most maple trees, in my experience do not die rapidly under those individual circumstances.

"I have received letters from Dr. Yvan Hardy (Dean of forestry and entomologist at Laval University) and Dr. Marcien Roberge (CFS Quebec), both scientists of high repute who have studied the problem in much greater depth than myself. They either do not think tent caterpillar is the major cause of the problem or that spraying would have helped to protect the trees... Bob Hatcher (CFS, Quebec) and his colleagues gave good support to my hypothesis... I received unexpected support for my suggestion from Ontario MNR pest control scientist B.H. McGauley and H.L. Gross (CFS-Gt. Lakes FRC) who have been studying the maple decline (Ontario term) phenomenon in the Owen Sound and Parry Sound districts from 1976-1979 following heavy defoliation during that period. They are now of the opinion that the rapid decline and death of maple in that region was mainly triggered by forest tent caterpillar."

newsmakers

on campus



The top three Renewable Resources Third Year Project Presentations were given by, left to right, Trish Sanderson, Wildlife, Marie-Claude Limoges, Soils, and Shiona Dempster, Wildlife, seen here with R.D. Titman, Chairman of Renewable Resources.



Earlier this year 13 NSAC students visited Macdonald, participated in the Livestock Show, and toured Quebec farms and agribusinesses.



Food and Nutrition Research Foundation awards were received by Velina Sutherland, left, 2nd year Food Science, and Linda Bussiere, 2nd year Food Chemistry. They attended a Gala Dinner of the Food and Allied Industries Division of the State of Israel Bonds Organization with Dr. Jean David, Associate Dean, Public Relations and Student Affairs.

off campus

GARY SLOCOMBE, Dip. '65, of Joliette, Quebec, is an agricultural expert with CARE in Bangladesh. Gary, who worked as a farm manager in various parts of Canada, went abroad with CUSO to Tanzania in 1967 to help the Tanzanian Government set up a large swine farm. Later he worked on projects in Africa, Syria, Jamaica, and Guatemala. He joined CARE in 1982.

ANDRE POMMAINVILLE, BSc (Agr) '71, is the recently appointed ag rep for Prescott, Ont.

MICHAEL AMOS, BSc (Agr) '80, has been made Product Manager for Roger/STB Inc., based in Kirkland, Que. He was formerly sales representative for eastern Ontario and the Maritimes.

RICHARD HART, BSc (Agr) '83, has been appointed Sales Representative for the Montreal, South Shore, and Quebec City area for TUCO Products Company's feed additives and animal health products division.

SUSANNAH MORTON, BSc (Agr) '84, Rexton, N.B., was among those selected to represent Canadian 4-H club members in this year's 4-H exchange to the United Kingdom.

deceased

HELEN RUTH (REYNOLDS) MATHEWS, Dip PE '18, at Montreal, Que. on March 10, 1984.

LEON A. BEAUDIN, BSA '22, of Huntingdon, Que. on May 2, 1984.

HARRIET F. VAN WART, BHS '23, at Fredericton, N.B.

DORIS (THOMPSON) WIGGS, Dip PE '24, at Port Perry, Ont. on April 24, 1984.

MIRIAM E. (SHAW) NASH, Dip. PE '27, at Ottawa, Ont. on March 29, 1984.

HOMER L. FLETCHER, BSc (Agr) '37, at Burlington, Ont. on June 26, 1983.



MACDONALD CELEBRATES THE MCGILL WOMEN'S CENTENNIAL ON SEPTEMBER 28, 1984

This year marks the hundredth anniversary of women being admitted to McGill University as students. At Macdonald, in the early years, women were in the majority so we have good reason to celebrate. Anyone who was enrolled in education, agriculture, home economics, or who served as academic or support staff is most cordially invited to return for this special celebration. On September 28, 5:00 to 7:30 p.m., there will be wine and cheese, plus an exhibit guaranteed to stir up fond memories, in the foyer of the new Macdonald-Stewart Building. Come and meet your friends and together let us celebrate our "Mac" years. This is not an exclusively female affair; all Mac affiliates are most welcome.

Cost: \$4.00 per person

For more information contact Mrs. Tardif, mornings only, at 514-457-2000 extension 170 or 214.

Tear off and return this portion to receive your ticket:

I, _____ accompanied by _____ guest/s plan
to attend the celebration on September 28 and enclose \$_____ (\$4.00 per person).

I was at Macdonald in _____.

Please enclose a stamped, self-addressed envelope.

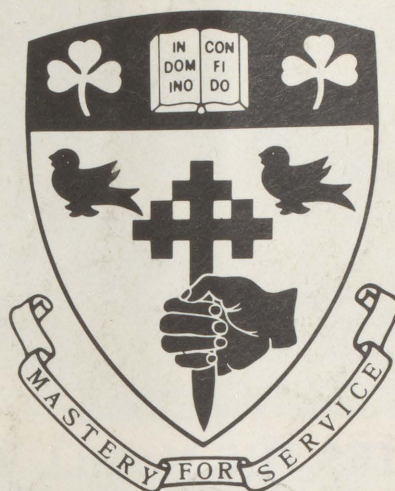
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c/o Mrs. F. Tardif

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